The Relationship between Institutional Experience Factors and International Student Persistence at a Public Community College in Washington State

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Abstract

In the 1930s, scholars began examining the forces behind students' decision to persist or depart from higher education institutions. These explorations initially looked at U.S. four-year university contexts, but research has since spread to other high education systems around the world and has demarcated for diverse institutional types, academic programs, and student demographics. Within this area of study there is a small contingent of researchers that seek to better understand persistence trends for international students in higher education. Recognizing that there remains a gap in the literature for international students enrolled at U.S. two-year public higher education institutions, the purpose of this study was to determine what relationships there are between institutional experience factors and international student persistence at a community college in Washington State.

Based on previous models from Tinto (1993), Braxton, Hirschy, and McClendon (2004), and Kwai, (2009), this study's first contribution was a modified conceptual framework specific for researching international student persistence in U.S. community college settings. Institutional experience factors were divided into academic system and social system with variables identified along the lines of four sub dimensions: academic performance, interaction with faculty and staff, campus involvement, and interpersonal relationships. Data analysis revealed that there were statistically significant differences with persisters having higher cumulative GPAs, more frequency of high credit and low credit course loads, and greater participation in the college managed homestay program. Findings for all other variables were deemed inconclusive. From these results, recommendations were proposed for policy and practice, which included systemizing institutional research for the international programs office, digitalizing international

student service processes, formalizing pre-arrival/pre-departure orientation, establishing a year-round peer mentoring program, and expanding linked course offerings. Advisement was also given for improvements to the conceptual framework and survey instrument tool as well as a call for a multi-case study design that longitudinally applies mixed research methodologies towards further defining of international student persistence causes and predictors at U.S. community colleges.

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CHAPTER I

Introduction

For more than half a century, community colleges have performed an increasingly vital role in the American higher education system. During the Massification Era of 1945-1975, these primarily two-year public institutions went through substantial growth due to two major social forces. First was the reintegration of more than 12 million American soldiers after World War II. This inspired the passage of the 1944 G.I. Bill as a means of providing financial support for their postsecondary education. Second, the Baby Boomer generation began reaching college age in the 1960s and 1970s. The combined effect was that higher education student enrollments skyrocketed by 500 per cent from approximately 2 million to 11 million (Cohen & Kisker, 2010). In response, the 1947 President's Commission on Higher Education recommended a national network of community colleges as a means of easing the burden on four-year universities that could no longer accommodate the rising student population on their own.

As a result, U.S. community colleges today have expanded to 1,108 strong (American Association of Community Colleges, 2016). Referencing data from the National Center for Education Statistic's Integrated Postsecondary Education Data System, Ma and Baum (2016) calculate that the combined total enrollments for two-year public institutions in 2014 reached 7.2 million, which equates to approximately 42% of all undergraduate students at that time. The impact of community colleges on education attainment is even greater when considering that 46% of students who completed a bachelor degree in 2013-14 had previously attended a community college in the past 10 years (National Student Clearinghouse, 2015). These statistics are a powerful demonstration of the prominence that community colleges hold in the grand scheme of American higher education.

Traditionally, as symbolized by the "community" in their names, community colleges were established to serve their geographic region. They are uniquely positioned to provide local students with an affordable pathway to complete the first two years of a bachelor degree, gain vocational qualifications to enter the workforce, update their skills for career transitions, or pursue personal goals as a lifelong learner.

Recognizing the crucial function that community colleges have in society, former U.S. Poet Laureate Kay Ryan praises:

> "I simply want to celebrate the fact that right near your home, year in and year out, a community college is quietly—and with very little financial encouragement—saving lives and minds. I can't think of a more efficient, hopeful or egalitarian machine, with the possible exception of the bicycle." (as cited in Krajeski, 2009)

However, the original missions of community colleges are undergoing changes, especially since the turn of the 21st century. Community college educators and administrators are realizing that their institutions must reposition themselves within an increasingly interconnected world. As Treat & Hagedorn write, "…the contemporary community college is poised as a global partner for the democratization and development of a global workforce" (2013, p. 2).

Hand in hand with globalization trends are the increase of international student enrollments at community colleges. According to the Institute of International Education's (2005) Open Doors data sources, in 2000 there were 70,616 nonimmigrant students studying at U.S. two-year institutions. As of the most recently published Open Doors report, that number has increased an estimated 23% to 91,648 in 2015 (Institute of International Education, 2015c). This equates to international students at community colleges comprising approximately 10% of the total 974,926 international student enrollments at U.S. higher education institutions. In terms of degree-seeking international student undergraduates, community colleges host 17.4% or 69,523 out of 398,824 (Institute of International Education, 2015a). Some forecasts also suggest that U.S. community college destinations are becoming more popular with international students and that their enrollments will continue to rise in the upcoming decades (Rubin, 2015; Thomas, 2013).

Community colleges are appealing to international students for much the same reasons as they are for American students. Attractive points are smaller class sizes, focus on teaching, affordability, open enrollment, and transfer opportunities to four-year universities (American Association of Community Colleges, 2013; Rubin, 2015). Another reason is the expansion of recruitment campaigns with community colleges spending

more money and resources on overseas marketing activities (Bissonette & Woodin, 2013; Brennan & Dellow, 2013; Rubin, 2015).

The benefits of international students studying at American colleges and universities are well documented in U.S. higher education circles. On campus, their presence adds cultural diversity and global perspectives both inside and outside the classroom (Pandit, 2007; Peterson, Briggs, Dreasher, Horner, & Nelson, 1999; Yefanova, Baird, & Montgomery, 2015). A recent study gives quantitative evidence that interaction with international students can also improve domestic students skills development in a wide range of areas from foreign language acquisition and critical thinking to quantitative abilities and scientific literacy (Luo & Jamieson-Drake, 2013). These are all valuable competencies that students need to be competitive in today's globalizing marketplace (OECD, 2016). Moreover, international students' are a financial resource for local, state, and national economies. Based on monetary and employment data, NAFSA (2015) appraises that "international students studying at U.S. colleges and universities contributed $30.5 billion and supported more than 373,000 jobs to the U.S. economy during the 2014-2015 academic year".

Nonetheless, it remains to be seen if community colleges are providing their international student populations with quality services. For one, research about international students' experiences at U.S. two-year public institutions is slim to none (Y. Zhang, 2016). Additionally, a challenge felt by community colleges is a lack of funding and resources for their international education efforts (Bissonette & Woodin, 2013). International programs offices at community colleges are also no strangers to being understaffed as reported by individual institutions (Austin Community College District, 2014; Chan, 2013; Salt Lake Community College International Student Services, 2012) and system-wide (Clark, 2012; Cragg, 1992). This begs the question, does Mori's assessment still hold true today—for community colleges specifically—that international students are "…one of the most quiet, invisible, underserved groups on the American campus" (2000, p. 143)?

Statement of the Problem

Chapter II Review of the Literature shows that studies of US higher education student persistence have a 75 year history with new studies being published each year.

Within the growing body of knowledge, depth is accompanied by breathe as researchers focus further on persistence trends for specific institutional types, academic programs, and student groups. The vast majority of studies have focused on the circumstances surrounding domestic student resistance; however, the past decade has witnessed increasing awareness of the conditions that influence international students' decision to continue studying at the college or university they are currently enrolled at.

Nevertheless, there remains at least three research gaps within this area of study. For starters, the collection of international student persistence research displays some disharmony. While scholars seem to be in general agreement that there is a correlation between international students' level of academic achievement and persistence, other variables such as pre-entry characteristics and social engagement have presented findings that are either contradictory or inconclusive. At the same time, there has been little to no consideration of the effects that variables like motivations, study goals, and living situation have.

Furthermore, international student persistence research would gain from progressive refinement of the scientific methods that are being employed. To be more precise, because this topic of academic interest is still in its infancy, there are a lack of replication studies that would enhance the research techniques and verify the results being presented. In particular, two elements that would especially benefit from expanded inquiries are conceptual frameworks and quantitative survey instruments. These essential tools must be tailored for international students' unique traits, perspectives, and learning situations. Thus far, Kwai (2009) appears to be the lone researcher who has attempted to create a conceptual framework designed for international student persistence. The remainder of scholars rely greatly on the theoretical constructions developed for studies of domestic student persistence. The same is true for college and university surveys that are administered broadly, but that are largely formulated for collecting data about domestic students.

Thirdly, research of international student persistence in community college settings is even scarcer. At the time of this study, there appears to be only two researchers (Behroozi-Bagherpour, 2010; Mamiseishvili, 2012a) who have addressed this topic specifically. Therefore, more research is needed that considers the reasons

behind international student persistence and departure at U.S. two-year public higher education institutions.

Research Questions

The purpose of this study is to explore the effects of institutional experience factors on international student' persistence at a public community college in Washington State. There is one overarching research question that steers this study.

- How do institutional experience factors relate to international students' decision to persist with their degree studies at a public community college in Washington State for the Spring 2016 Quarter?

From this main research question, in correspondence with conceptual frameworks used in previous studies of international student persistence (see Chapter II), there are two dimensions, four sub dimensions, five sub research questions, and five hypotheses that were established.

Table 1

Research Dimensions, Sub Research Questions, and Hypotheses

Dimensions	Sub Dimensions	Sub Research Questions	Hypotheses
Academic System	Formal (Academic Performance)	How does academic performance relate to international student persistence?	There is a significant statistical difference between persisters and non-persisters in terms of cumulative GPA, course load, and active participation in class.
	Informal (Interaction with Faculty & Staff)	How do interactions with faculty and staff relate to international student persistence?	There is a significant statistical difference between persisters and non-persisters in terms of their satisfaction and engagement with faculty and staff.
Social System	Formal (Extracurricular Activities)	How does involvement in extracurricular activities and on-campus employment relate to international student persistence?	There is a significant statistical difference between persisters and non-persisters in terms of participating in extracurricular activities and on-campus employment.
	Informal (Peer Group Interactions & Living Situation)	How do interactions with other students relate to international student persistence?	There is a significant statistical difference between persisters and non-persisters in terms of their satisfaction and engagement with other students.
		How do interactions with one's living situation relate to international student persistence?	There is a significant statistical difference between persisters and non-persisters in terms of their engagement and satisfaction with their living situation.

Significance

Earlier in this chapter, data was provided in support of the contention that international students at U.S. community colleges are a significant demographic group worthy of greater attention. Acknowledging the importance of further explorations in this subject area, the present study has several theoretical and practical implications. First, it seeks to raise awareness about the factors that influence international student persistence as a whole and in community college settings specifically. Second, it attempts to assist with filling the research gap and perhaps shedding light on inconclusive findings from previous studies. Third, this study offers (a) additional variables, (b) an expanded conceptual framework, and (c) an adapted survey that researchers and practitioners can consider in their work with international students. For example, these tools and the conclusions reached could be of benefit in designing campus policies, advising techniques, orientation programs, and extracurricular activities. Fourth, in choosing a single case site, this study provides institutional research that the selected community college may find useful for their internal affairs. Lastly, even though this study is not generalizable for all public two-year institutions, other U.S. community colleges of similar characteristics may discover insights that apply to their local contexts. At the very least, there should be relevant pieces of information for some of the other 33 community and technical colleges in Washington State.

Definitions

There are various terms used by researchers of higher education student persistence. This subsection endeavors to define key vocabulary that is central to the present study. For a comprehensive list of related terms and definitions, an essential resource is Seidman's book *College student retention: Formula for student success*. In particular, Hagedorn's (2012) chapter *How to define retention: A new look at an old problem* and Berger, Blanco, and Lyons' (2012) chapter *Past to present: A historical look at retention*.

1. Institutional Experience Factors: The elements within a higher education institution setting that have an impact on students' academic and social integration on campus. These include sub dimensions divided into formal (academic performance and

campus involvement) and informal (interactions with faculty, staff, and peer-groups as well as living situation) classifications (adapted from Tinto, 1993).

2. International Student: For this study, international student is defined as any nonimmigrant that is enrolled at the community college research site on an F-1 academic student visa. While there are other nonimmigrant visa types (e.g. K-1 fiancé(e) visa or B-1 temporary business visitor visa), the International Student Services and Programs (ISS&P) office at the community college research site only has regulatory jurisdiction to care for F-1 academic student visas.

3. Persistence: Berger, Blanco, and Lyons define persistence as "…the desire and action of a student to stay within the system of higher education from beginning year through degree completion" (2012, p. 12). Pascarella and Terenzini further clarify persistence as "progressive reenrollment in college, whether continuous from one term to the next, or temporarily interrupted, then resumed" (2005, p. 374). These two definitions are complimentary in emphasizing the aspect of a students' decision to persist or withdrawal and the allowance of intermittent reenrollment circumstances that are seen especially in community college settings.

Retention is another closely related term in the literature that is often used interchangeably with *persistence*. Yet, Hagedorn denotes the different usage of the two words by The National Center for Education Statistics as "institutions retain and students persist" (2012, pg. 85). A simple distinction, but an important one with persistence expressing the student's choice to remain at the college or university, which is an essential component that should not be seen solely as an afterthought or outcome of institutional actions for retention. The measurements used in this study also weigh heavily on international students' self-reporting as to whether or not they choose to continue their enrollment at the community college research site as determined by the survey instrument and Institutional data from desk research documents. This makes persistence a more appropriate characterization for this study because of these two data sources.

4. *Persisters*: International students at the community college research site who were enrolled for the Spring 2016 Quarter and identified as they would either (a) continue with their enrollment in subsequent quarters by giving a "Yes" response for the

ISSE Survey question item #17, “Will you finish a two-year/associate degree at this college?” or (b) would be graduating with a degree at the end of the Spring 2016 Quarter as determined by graduation degree audits.

5. Non-persisters: International students at the community college research site who were identified as either (a) discontinue their enrollment after Spring 2016 Quarter by giving a “No” response for the ISSE Survey question item #17, “Will you finish a two-year/associate degree at this college?”, or (b) discontinued their enrollment during the Spring 2016 Quarter without finishing their study program as determined by transfer-out forms and enrollment records.

6. Undecideds: International students at the community college research site who were enrolled for the Spring 2016 Quarter and identified as not being sure if they would persist or depart with their study program in subsequent quarters as indicated by their giving a “Maybe” response for the ISSE Survey question item #17, “Will you finish a two-year/associate degree at this college?”.

7. Community College: “…a regionally accredited institution of higher education that offers the associate degree as its highest degree; however, today, in a number states community colleges offer the bachelor's degree as well” (Vaughn, 2006, p. 2).

8. Washington State: Located in the Pacific Northwest corner of the continental United States, Washington became the 42nd state on November 11, 1889. It measures 66,455.52 square miles in size and has a population of 7,170,351 (United States Census Bureau, 2015). The state of Washington is exclusively separate from Washington D.C., the district on the East Coast that is the national capital of the United States.

CHAPTER II

Review of the Literature

As stated in the previous chapter, the purpose of this study is to gain a deeper understanding of international student persistence at a public two-year higher education institution in Washington State. Towards that end, this chapter takes a closer look at the growing body of knowledge that pertains to this area of academic inquiry. Critical review begins by opening from a broad standpoint in considering the history of student persistence as a whole. This is followed by a focus on literature pertaining to international student persistence. As a final point, conceptual frameworks used in previous studies of higher education student persistence will be examined and reconfigured for international student persistence at community colleges.

Domestic Student Persistence Research

Persistence of domestic students at postsecondary institutions has been researched extensively over the past five decades. Much of these scholarly investigations have concentrated on four-year colleges and universities in the United States. However, there have been an increasing number of studies related to student persistence, retention, departure, and/or attrition in other country's higher education systems. They have predominantly been conducted from native English speaking countries such as Australia (McKenzie & Schweitzer, 2001; Olsen, Burgess, & Sharma, 2006; Leveson, McNeil, & Joiner, 2013), South Africa (Letseka & Maile, 2008; Lourens & Smit, 2003; Petersen, Louw, & Dumont, 2009) and the United Kingdoms (Dodgson & Bolam, 2002; Yorke & Thomas, 2003; National Audit Office (NAO), 2007). There also have been comparative studies from international perspectives that are worthy of mention (Burkholder & Holland, 2014; van Stolk, Tiessen, Clift, & Levitt, 2007; Yorke & Thomas, 2003). For these reasons, before perusing the literature on international student persistence at American community colleges, it is useful to consider the initial research that laid the groundwork for the deepening literature base on student persistence in general. At the very least, to do so within the context of U.S. higher education institutions.

Berger, Blanco, and Lyons (2012) provide a historical recounting of how postsecondary student retention has been conceptualized and addressed in the United

States. While their narration begins with the Colonial Era in 1600s, Berger et al (2012) note that scientific research of student retention did not start developing until the turn of the 20th century. This is likely because American colleges and universities were consumed by the transformation from an elite to mass higher education system during the first 250 years of their existence. Institutional goals were fixed on attracting students and accommodating rapid growth as opposed to the conditions that effect students' decision to persist or depart. That was until the 1930s with John McNeely's research into college student morality. Commissioned by the United States Department of the Interior and the Office of Education, McNeely (1937) collected data from 60 higher education institutions about attrition rates, degree completion, departure motives, and the impact of several variables from student demographic information and institutional characteristics to engagement in extracurricular activities and employment status. In all actuality, McNeely's line of research may have gained momentum from this point forward if it were not for events such as the Great Depression and World War II overshadowing higher education interests (Berger et al., 2012).

The 1970s marked a major shift in research about student retention. Berger et al. (2012) describe this decade as a period of "Building Theory" that was largely influenced by the social and political revolutions of the 1960s. Civil rights movements not only raised issues of equal access to colleges and universities for all students, but also demanded that higher education institutions take greater responsibility for meeting the needs of the diversifying student body. From these circumstances, scholars (Astin, 1964; Bayer, 1968; Grace, 1957; Koelsche, 1956) resumed the study of student retention. However, Spady (1970, 1971) was the first scholar to systematically synthesis previous research on attrition in calling for an analytical-exploratory method supported by longitudinal data. Spady's empirical model also paved the way for theoretical frameworks in the decades that followed as well as inspiring interdisciplinary approaches that go beyond the first set of psychological explanations that were proposed for students' rationales to either persist or depart.

It is during the 1970s that Vincent Tinto began his long career of researching student retention. Tinto is arguably the most recognized scholar in the field with his work recurrently described by Braxton as having reached "paradigmatic stature" (Braxton,

Sullivan, & Johnson, 1997, p. 104; Braxton, 2000, p. 1; Braxton, Hirschy, & McClendon, 2004, p. 7; Braxton, Doyle, & Hartley, 2014, p. 3). This sentiment has also been echoed by numerous other researchers (Pascarella & Terenzini, 2005; Evans, Carlin, & Potts, 2009; Mamiseishvili, 2012). In addition to statements made by fellow colleagues, another gauge of Tinto's influence is citation analysis that measures the impact of his publications. Notwithstanding his entire catalog of published works, Tinto's (1975; 1993) two mainstay texts on student departure have garnered over 15,000 citations according to Google Scholar (accessed April 23, 2016). Similarly, searching Google Scholar for the exact phrase "Tinto's Model" retrieved nearly 1800 articles with 76 of the results having the exact phrase in their title.

Tinto's research has given rise to two related models. One that sought to defend student integration (Tinto, 1975) and the other to explain reasons for institutional departure (Tinto, 1993). Initially, Tinto followed Spady (1970, 1971) in basing his conceptions on Durkheim's Theory of Suicide, which asserts that an individual's susceptibility to end their own life can be predicted by the extent they are connected to society. In other words, the more alienated a person is from social and moral networks, the more likely they are to commit suicide compared to others that have a higher degree of community involvement. Tinto draws an analogy with Durkheim's theory that a student's decision to depart is affected by their level of academic and social integration at the higher education institution they are studying at.

A decade later, Tinto (1988) applied Dutch archeologist Van Gennep's exploration into the rites of passage in tribal societies to his Student Integration Model. Tinto was particularly interested in Van Gennep's view of the universal human condition as a series of stages (e.g. birth, adulthood, marriage, and death) that are shared across diverse cultural backgrounds. Responding to these life events, individuals and groups engage in customs that help them to navigate the changes they are going through. During times of crisis and hardship, ceremonies and rituals also act as coping mechanisms and even as a means of survival for societies to endure from generation to generation. Recognizing how this sociological perspective can be used to describe the experiences of higher education students as they transition through college life. In this regard, Tinto saw Van Gennep's contribution as support for adding a time dimension to

his model that seeks to explain the longitudinal stages of academic and social integration.

Nevertheless, widespread recognition inevitably brings an assortment of peer reviews that criticize as well as validate one's findings and Tinto is no exception. The collection of positive and negative responses to his research effectively supplies the enlarging library on student retention. For starters, a prevalent contention made against Tinto's theory is that it was developed for assessing four-year residential colleges and universities. While a number of researchers (Cabrera, Amaury, & Castaneda, 1993; Getzlaf, Sedlacek, Kearney, & Blackwell, 1984; Pascarella & Terenzini, 1983) have confirmed Tinto's conclusions in similar contexts, others contend that academic and social integration do not adequately explain persistence and departure trends for traditional students at the higher education institutions they studied (Brunsden, Davies, Shevlin, & Bracken, 2000; Kwai, 2009; Williamson & Creamer, 1988).

Regardless of the mixed results, there is no denying that Tinto's models have spurred deeper scientific inquiries into student persistence and departure across higher education settings. For instance, scholars (Braxton et al., 2014; Liu & Liu, 1999; Pascarella, Duby, & Iverson, 1983; Wolfe, 1993) have ventured outside of residential colleges and universities to study student retention at commuter colleges and universities. This is a pertinent delineation because these two institutional types have distinct campus environments and their students generally embody different personal characteristics, study motivations, and enrollment status. Subsequently, Tinto (2006) has clarified his initial findings to take these differences into consideration with recommendations for different types of retention policies and programs based on student group. Along these lines, researchers have also acknowledged the need for retention studies of community colleges (Barnett, 2007; Freer-Weiss, 2004; Halpin, 1990; Mertes & Hoover, 2014; Nakajima, Dembo, & Mossler, 2012; Napoli & Wortman, 1998; Settle, 2011; Stuart, Rios-Aguliar, & Deil-Amen, 2014). Their argument is basically the same in that frameworks designed for researching student retention at four-year institutions are not one-size-fits-all.

Moreover, persistence research has expanded to scrutinize specific study programs and student demographics in mirroring the U.S. higher education system's

increasing diversity. One example is how scholars have honed in on retention and attrition trends for not only undergraduates, but students seeking graduate and doctoral degrees (Dorn & Palalewis, 1997; Nerad & Miller, 1996). Specific academic disciplines have also become focal points like nursing (Benda, 1991; Shelton, 2012), engineering (Bernold, Spurlin, & Anson, 2007; Meyer & Marx, 2014), and business-related majors (Bennett, Kottasz, & Nocciolino, 2007; Kane, Chalcraft, & Volpe, 2014). With the evolving nature of higher education brought on by technological innovations, retention of students for distances courses are a point of interest as well (B. J. Evans, Baker, & Dee, 2016; Nora & Snyder, 2009). Meanwhile, a substantial amount of attention has been given to historically underrepresented students. This includes studies of student persistence based on ethnicity (Hu & St. John, 2001; Museus & Quaye, 2009), gender (Leppel, 2002; Wyer, 2003), and lower socioeconomic backgrounds (Paulsen & St. John, 2002; Titus, 2006) with these independent variables frequently being interrelated.

Reminiscent of the incongruences between Tinto's initial findings and the replication studies that followed, there are again a mixture of results that affirm or negate the association between the level of a student's academic and social interaction and their decision to persist or depart. The expansion of research derivations that target specific institutional types, study programs, and student populations are also the backdrop by which studies arose to investigate international student persistence at U.S. community colleges. This is a topic that will be discussed in the next section of this chapter.

International Student Persistence Research

Studies of international student persistence are relatively recent in comparison to the 75 years of research for domestic students. However, literature in this area has noticeably been on the rise in the past decade. International student persistence researchers have also employed a variety of qualitative and quantitative methods to examine different types of higher education institutions and degree programs.

In the United States, Tompson and Tompson (1996) conducted one of the first studies that focused exclusively on international student retention. Using a mixed methods approach, they collected data through a quantitative survey of faculty members and qualitative focus-group interviews of international students at two

universities in the Southeastern region of the country. Their intention was to determine the motivations behind general behaviors displayed by international student that hinder their academic success and social integration. They identified a number of forces that cause adjustment difficulties for international students including language barriers, lack of networking with American students, and cultural differences concerning in-class participation. Tompson and Tompson also offered recommendations for how faculty can create an environment that is conducive to international student retention. Their suggestions included changes to course induction processes, increasing the use of small-group activities and making discussion of diversity issues a central component.

Despite Tompson and Tompson's earlier research, Andrade (2003, 2005, 2006-2007, 2008) is commonly cited by scholars in the opening of their literature reviews on international student persistence. One likely reason is the depth of Andrade's studies compared to Tompson and Tompson (1996), especially when considering that Andrade built upon earlier doctoral work by Evans (2001). Andrade is also one of the original researchers to concentrate on international students' first-year experiences in American higher education, which is an important transitional period emphasized in studies of domestic student persistence. Another germane distinction is that Andrade followed Evan's lead in choosing the same private, four-year, religiously-affiliated institution for her qualitative research site. Additionally, the international student that Andrade interviewed were in their senior year and about to graduate with her interview questions tailored to determine the factors that influenced their decision to persist.

Regardless of these research design differences, Andrade is in agreement with Tompson and Tompson's two main conclusions. Firstly, cultural and linguistic challenges make it difficult for international students to adjust. Second is the need for institutional programs that development mentor relationships with faculty and staff as a means of promoting international student persistence. Taking this one step further, Andrade provides evidence that international students who successfully completed their degree were able to do so because of their "ability to change or to integrate into the dominant norms, values, and behaviors of the institution" (2006, p. 35). Yet, in reference to Tinto's student integration model, Andrade stresses that adaptation should not be viewed as assimilation. The personal transformations experienced by the international students in

her study were not a rejection of their previous identities, but an amalgamation of the home culture they were raised in and the host culture they were immersed in during their undergraduate studies.

Quantitative methods have also been used to explore the dynamics of international student persistence. One of the first instances is Kwai (2009) who undertook the large task of evaluating statewide international student retention in two Midwestern higher education systems. Limiting his inquiry to undergraduate degree-seekers who began their enrollment in fall of 2006, Kwai investigated international student variables organized into three categories: (a) pre-entry characteristics, (b) institutional experiences, and (c) level of on-campus integration. Kwai discovered that international students' decision to stay enrolled after their freshmen year was influenced by second semester GPA (more than first semester GPA or cumulative GPA), above-average course load attempts, and obtaining employment on-campus. Conversely, Kwai determined that individual attributes such as gender and nationality did not have a significantly impact on international student persistence. Sources of financial sponsorship and frequency of international student office appointments were also indecisive factors.

Three years later, Mamiseishvili (2012b) looked at international student persistence on an even broader scale. Examining data from the Beginning Postsecondary Students Longitudinal Study survey, Mamiseishvili identified 200 international student respondents that were enrolled at colleges and universities across the United States in fall of 2003. Her findings were consistent with Kwai's in showing that academic variables such as GPA, English language proficiency, and degree planning serve as predictors of persistence.

On the contrary, Mamiseishvili found that social integration may negatively affect international student persistence. An indication of this is that international student peristers reported low participation rates in school clubs, sports, and fine arts activities. Referring back to Andrade (2006-2007; 2008), Mamiseishvili offers the explanation that first-year international students generally prioritized academics over having active social lives as a strategy for adjusting to the challenges of American higher education. However, Mamiseishvili admits that the negative correlation between social integration

and international student persistence is suspect for a couple of reasons. One is the limited scope of extracurricular activities covered by the survey. Multicultural and international events on campus that international students are more likely to participate in were not accounted for. Mamiseishvili also cites research from Rajapaksa and Dundes (2002) stating that international students are more interested in the quality of the relationships they make as opposed to the number of friends they have or how far their social network extends.

More recently, Smith (2015) embarked on a study of persistence that compared academic and social engagement between international students and domestic students at a U.S. four-year public research university. Smith analyzed two sources of quantitative data beginning with first-year student responses to the National Survey of Student Engagement (NSSE) from 2001-2011. This was followed by institutional data about GPAs and credit hours earned for the matching set of international student and domestic students. Her findings corresponded with previous research showing that GPA and credit hours earned are related to persistence. This was the case for both international students and domestic students whereby persisters had higher GPAs and completed more credit hours than non-persisters. However, Smith found significant differences for only 4 of the 32 NSSE items that evaluated academic and social engagement, thus making the results for these variables inconclusive. She reported that international student persisters were more socially engaged than international student non-persisters, which seemingly contradicts Mamiseishvili's (2012b) results for social integration. In contrast, domestic student persisters lower levels of social engagement than domestic student non-persisters.

Regarding international student persistence at U.S. community colleges, so far there appears to be only two researchers (Behroozi-Bagherpour, 2010; Mamiseishvili, 2012a) that have focused solely on this topic. A point of convergence between Behroozi-Bagherpour and Mamiseishvili is that their respective theoretical frameworks are grounded in Tinto's (1975, 1993) conceptualizations of academic and social integration. Their difference is in the research designs they chose. Behroozi-Bagherpour (2010) investigated retention at an urban community college in Texas through qualitative interviews of 10 international students. Mamiseishvili (2012a) again utilizes quantitative

data from the Beginning Postsecondary Students Longitudinal Study in focusing on survey responses from 120 international students enrolled at U.S. two-year colleges in fall of 2003. Nevertheless, these two researchers' findings were in agreement that international students' campus integration can have a positive impact on persistence. The important note here is that Mamiseishvili (2012a) expanded the category of social integration in this second study to be attentive of how it is interconnected with academic integration. Namely, that the social aspects of student-student interactions and faculty-student interactions are also influential, recognizing again that selection of extracurricular activities reported in the Beginning Postsecondary Students Longitudinal Study are insufficient.

Lastly, the emergence of new variables for studies of domestic student persistence is proving true for studies of international student persistence as well. Research continues to specialize in specific groups of international students. For example, studies of international graduate students at U.S. higher education institutions (Srivastava, Srivastava, Minerick, & Schulz, 2011), international students pursuing engineering degrees (Voyles, 2012), and even international student-athletes (Kitsos, 2012; Kontaxakis, 2011). While some commonalities can be drawn between these researchers' findings and those in the studies previously mentioned, this subsection refrained from going into detail here. The reason is because the experiences of these international student groups cannot be generalized with the experiences of the overall international student population that starts their undergraduate studies at a U.S. community college.

In sum, there are five main takeaways from review of the literature on international student persistence research. (1) This area of study is still in its infancy having evolved out of domestic student retention research and only in the past decade; (2) conceptual frameworks that guide international student persistence research commonly refer to Tinto's models for student integration and departure, (3) there is a growing consensus that academic factors such as GPA, attempted course load, and credits earned, are related to persistence; (4) it is still unclear if social integration has an influence on international students' decision to persist or depart, and (5) research about international student persistence at U.S. community colleges is still limited. All together,

these points served as a guide for this current study's research questions (see Chapter I) and will contribute to the discussion in Chapter V.

Conceptual Framework

The conceptual framework for this study was developed out of the literature on higher education student retention that was highlighted in the previous two sections of this chapter. As a general foundation, (Habley, Bloom, & Robbins, 2012) provided a detailed overview regarding the complexities of perspectives on retention theory and research in relation to student and institutional factors. They divide the various schools of thought into five main categories: sociological (Spady and Tinto), psychological (Astin, Bean and Eaton), organizational (Bean), economic (St. John, Cabrera, Nora, and Asker), and cultural (Kuh and Love). Commenting on the utility of each of these theoretical perspectives, Habley et al. write that these characterizations are "…useful in understanding selected elements that contribute to our understanding of student departure, yet no one theoretical perspective is comprehensive enough to encompass all of the factors that contribute to student persistence" (2012, p. 27). Kwai expresses this opinion in much the same way when stating that there is "no one magic formula or model to predict the persistence of postsecondary students in U.S. higher educational institutions (2009, p. 172).

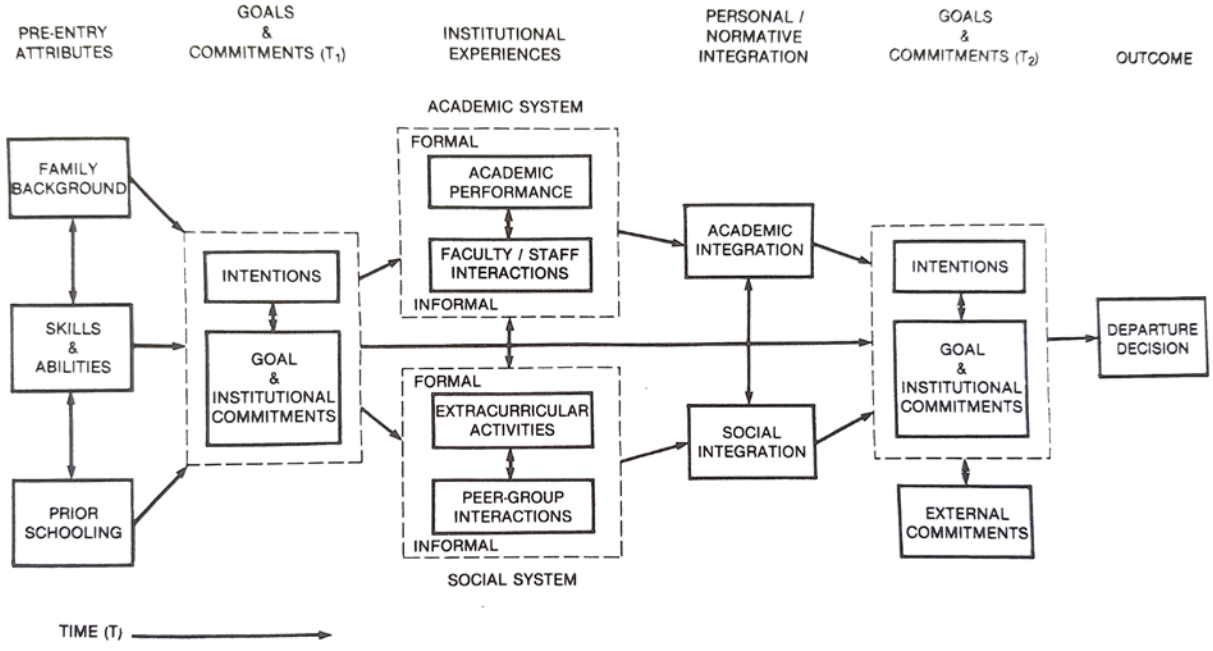
With this in mind, constructing a conceptual framework that integrates all the above-mentioned models of retention theory and research is an enormous task that goes beyond the scope of this study. Therefore, based on precedent set by previous quantitative studies of international student persistence (Behroozi-Bagherpour, 2010; Mamiseishvili, 2012a, 2012b; Smith, 2015), the investigator first referred to Tinto's (1975, 1993) *Social Integrationist Model* as an initial starting point. Second, Braxton et al.'s (2004) revised *Theory of Student Persistence in Commuter Colleges and Universities* (as cited in Braxton et al., 2014) was also considered because of the amendments these experts made to Tinto's model being applicable for community college contexts. Finally, an expanded version of Kwai's (2009) *Model of International Student Persistence* provided scaffolding as the only model for international student persistence discovered in the literature. The end product is a customized conceptual

framework for the particularities of this study's research site and accessible population delimitations (see Chapter III).

Tinto's Social Integrationist Model. As introduced earlier in this chapter, Tinto's work for higher education student retention is the most widely recognized of all theories and models in the field. He approaches institutional experience factors of retention from a viewpoint of academic and social systems that are partitioned into formal and informal circumstances. His contention is that these systems have an impact on the level of students' academic and social integration. Tinto also accounts for students' pre-entry attributes (family background, skills, and prior schooling) as well as their goals and commitments (intentions and goal & institutional commitment) before enrollment. Longitudinally, the impact of academic and social integration—along with external commitments—are evaluated to determine their effects on students' goals and commitments over time during their studies. All of these elements combine to influence the students' decision to depart or persist as shown in the following figure.

Figure 1

Tinto's Model of Institutional Departure



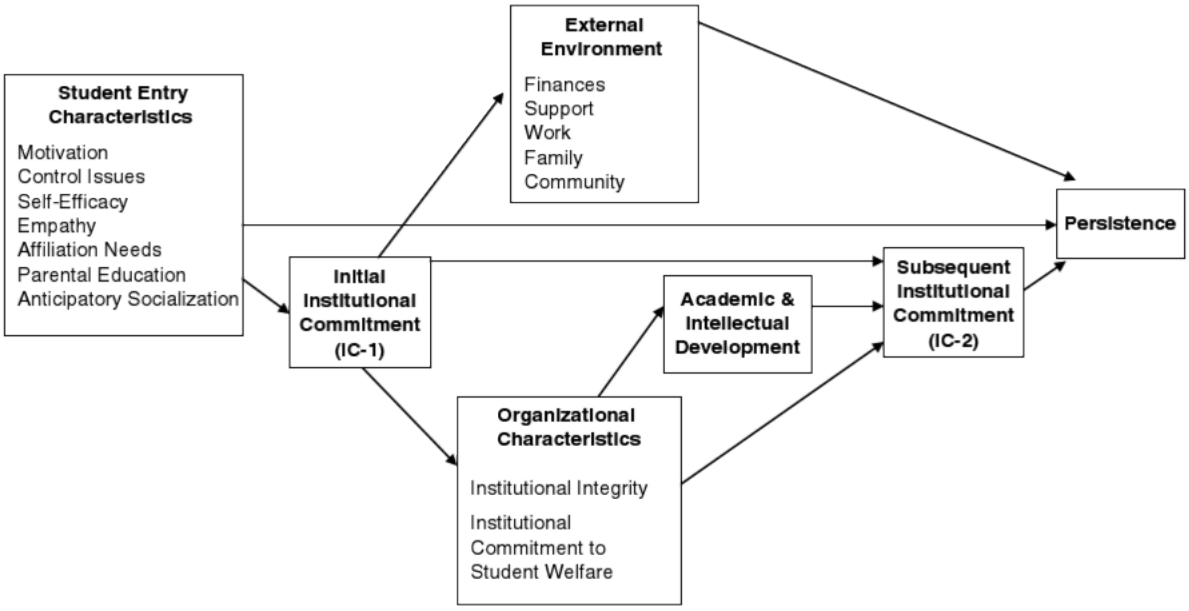
(*Source:* Tinto, 1993, p.114)

These points being said, other student retention researchers have proposed criticisms of Tinto's model that should not be ignored. A selection of these arguments were offered earlier in this chapter along with the spread of retention studies for varying institutional types, student demographics, and study programs. Nonetheless, scholars such as (Braxton et al., 2014) admit that disagreements with Tinto's model do not justify its abandonment. Instead, making contextual modifications based on the identified research design parameters are far more productive.

Braxton, Hirschy and McClendon's Theory of Student Persistence in Commuter Colleges and Universities. These three experts sought to expand on Tinto's efforts by proposing separate models that are aligned by institutional type. They first offered a revision of Tinto's model for residential colleges and universities followed by a new model for commuter colleges and universities. Of these two, the latter is pertinent for this study because of the community college research site.

Figure 2

Theory of Student Persistence in Commuter Colleges and Universities



Source: Revision of Braxton, Hirschy, and McClendon (2004) as cited in Braxton et al. (2014, p. 111)

While Braxton, Hirschy, and McClendon's model and Tinto's model share some similarities, there are important differences made for commuter college and university settings. Notable are the variables articulated by Braxton, Hirschy, and McClendon for the components of student entry characteristics and external environment. They take into account the students' psychological state and influence of factors that outside the community college's direct control such as the influence of parents, finance, work, immediate family, and community.

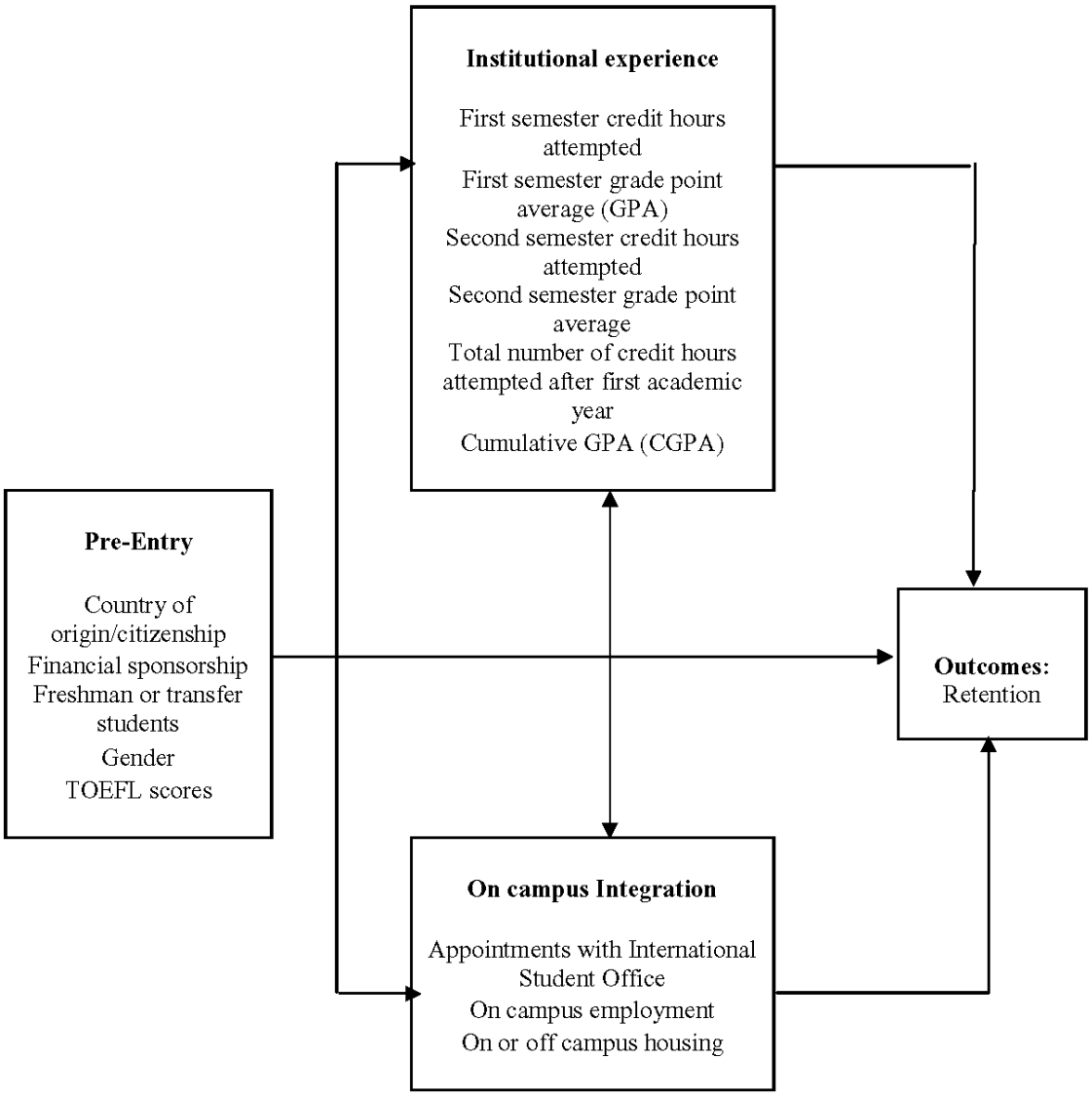
However, on closer inspection the model for commuter colleges and universities shows areas of inapplicability for international students. Without going into substantial detail about the various disparities, three readily apparent areas involve enrollment status, immediate family, and employment. For one, 62% of American students at community colleges study part-time (American Association of Community Colleges, 2016) whereas degree-seeking international students must study full-time to maintain their visa status in accordance with Federal immigration laws (U.S. Citizenship and Immigration Service [USCIS], n.d.). Additionally, 29% of American community college students have children (Nelson, Froehner, & Gault, 2013) with 17% being single parents (AACC, 2015). International students have far less family commitments in this regard with only 33,632 F-2 dependent visas being issued by US embassies in 2015 compared to 644,233 F-1 student visas (U.S. Department of State, n.d.). At the community college research site for this study, approximately only 10 currently are on F-2 (A. Mercedes-Curtis, personal communication, June 3, 2016). Meanwhile, U.S. Federal immigration law again places restrictions on international students in permitting them to only work on-campus and for less than 20 hours a week (USCIS, n.d.). On the other hand, upwards of 41% of American students at community colleges work full-time during their studies (AACC, 2015). To this extent, international students' experiences at community colleges seem to more closely resemble American students at residential colleges and universities. This is another argument for including Tinto's model when evaluating international student persistence.

Kwai's Model of International Student Persistence. Kwai provides a number of amendments to persistence models for international student contexts. Starting with pre-entry attributes, variables such as country of origin and English proficiency

measured by TOEFL scores are germane. For on campus integration, measuring appointments made with the international student office and housing type are also interesting additions, although the statistical significance for these two elements are less studied than other factors.

Figure 3

Kwai's Model of International Student Persistence



Source: (Kwai, 2009, p. 47)

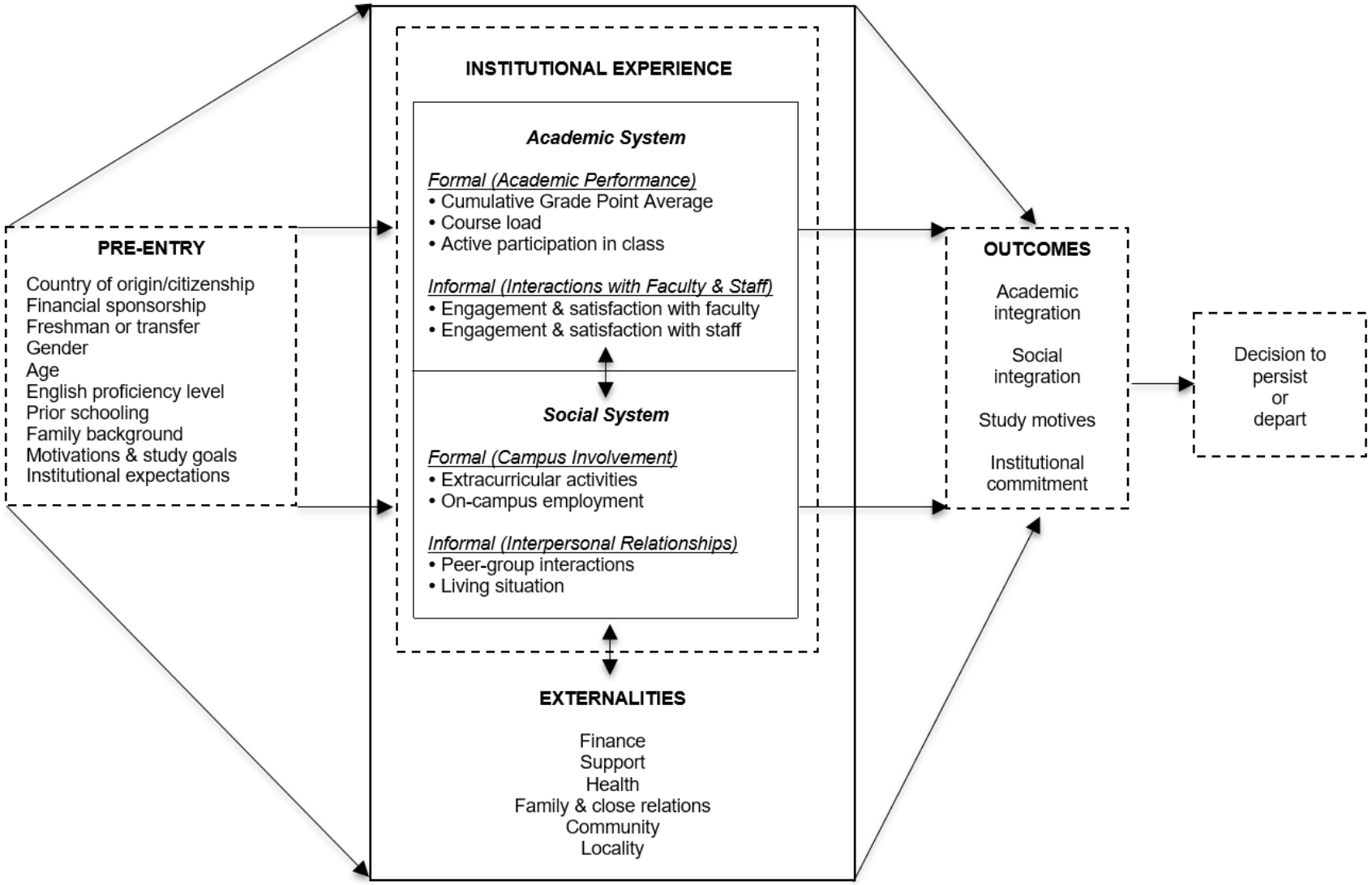
A Conceptual Framework for International Student Persistence at U.S. Community Colleges. There are two enhancements to Kwai's model for its application to international student persistence at U.S. Community Colleges. First, the components in each of three categories are further clarified and expanded on. In the pre-entry dimension, the category of age was added because community colleges have a significant amount of nontraditional students at varying life stages. For instance, the community college research site has a minimum admission requirement that students must be 16 years old. At the same time, adult professionals and retirees also enroll in courses. Moreover, the categories of prior schooling, family background, motivations & study goals, and institutional expectations were borrowed from Tinto's model and Braxton et al.'s model because of the impact that these variables displayed in previous studies. Then, the category of "TOEFL score" was changed to "English proficiency level" with some higher education institutions accepting other tests such as IELTS, SAT, and ACT or having their own local English placement assessment.

Second, Kwai's three categories leading to retention outcomes are blended with the institutional experience factors in Tinto's model and external environment factors in Braxton et al.'s model. To illustrate, Kwai's variable of "Appointments with International Student Office" was combined with faculty/staff interaction and enlarged to consider students' engagement and satisfaction with these campus units. The same action was taken for the category of "on or off campus housing" with engagement and satisfaction added to this variable as well under the umbrella of living situation. Meanwhile, Kwai's categories of credit hours attempted in the first semester and after the first year were consolidated into a "course load" variable to account for low credit and high credit course loads. *Figure 4* on the next page is a visual representation of these adaptations

Lastly, a note that not all variables were included in the construction, operationalization and data collection of this study (see Data Sources section in Chapter III). Methodology considerations and delimitations led to the disregarding of variables under the categories of pre-entry characteristics and externalities. In particular, *Table 3* on page 32 provides more details about how institutional experience factors variables in this conceptual framework were connected to the three data sources used in this study.

Figure 4

A Conceptual Framework for International Student Persistence at U.S. Community Colleges



CHAPTER III

Methodology

As stated in Chapter I, the purpose of this study is to explore the connection between institutional experience factors and international student persistence at a Washington State community college. The overall research strategy can be classified as an explanatory case study of a single higher education institution that seeks to determine if international students' academic and social integration influences their decision to persist or depart. One main research question was constructed as a guide for the study: How do institutional experience factors influence international students' decision to persist with their degree studies at a Washington State community college for the Spring 2016 Quarter? From this main research question there are two dimensions, four sub dimensions, five sub research questions, and five hypotheses that were established (refer back to *Table 1*).

This chapter outlines the research design structures that guide the processes for answering these questions and testing these hypotheses. Included in the methodological description are details about the research site, sample population, data sources, data collection and analysis procedures, the validity and reliability of the findings, and limitations.

Research Site

The Washington State community college research site was first chosen because of the overall gap in literature for international student persistence at U.S. two-year public institutions. The majority of studies thus far have primarily focused on four-year colleges and universities with only two researchers (Behroozi-Bagherpour, 2010; Mamiseishvili, 2012a) having looked at U.S. two-year public institutions specifically. Behroozi-Bagherpour conducting research at a large urban community college in Texas while Mamiseishvilli investigated international student persistence rates nationwide.

Second, the author of this study selected the Washington State community college research site because of his professional connection to the institution. As an employee in the college's ISS&P office, he utilized his familiarity with the campus ecosystem as support for his data collection efforts including knowledge of the accessible population and institutional practices as well as rapport with gatekeepers and

colleagues. This is similar to other international student persistence researchers like Andrade, Behroozi-Bagherpour, and Smith who also elected to study colleges and universities that they were working for at the time.

Third, the characteristics of the research site and its surrounding context were also considered. In the last 5 years, Washington has consistently ranked as the 11th most popular state destination for international students with their numbers rising 40% between 2010 and 2015 from 16,449 to 27,051 (Institute of International Education, 2010, 2015b). Of the 34 community and technical colleges in Washington State, the research site is also in the top eight for both total student annual enrollments and international student enrollments (State Board of Community and Technical Colleges, 2015). The idea here is that the research site is neither the largest nor the smallest two-year public institution in the state. Size-wise it is towards the upper half of the Washington State community and technical colleges, which could lead to a greater possibility that this study's findings may have some applicability to other institutions that have similar local conditions.

Sample Population

According to institutional records, the total headcount of fulltime international student on F-1 visas enrolled at the community college for the current spring 2016 quarter was 416. F-1 visa status was the first delimitation since this is the extent of the ISS&P office's jurisdiction (as mentioned under the definition of *International Student* in Chapter I). Concentrating on active students for spring 2016 quarter also allowed for delving deeply into the present-day conditions of the research site for policy and practice discussions.

From this target population, four sampling exclusion criteria were applied to the survey data collection half of the study. 24 non-degree seekers enrolled in short-term programs were discounted because they were committed to returning to their home institution and not to persist at the community college. Nine international students were removed due to their absence from campus after being granted official leave for the spring 2016 quarter. 47 more were removed because they were under the age of 18 at the time of the study. This is in adherence to U.S. Federal Government laws protecting minors with the steps need to obtain foreign parental consent for their adolescent to

legally participate being exceedingly challenging. Fourth, 19 international students were identified as terminated, dropped from classes, or not enrolled and unreachable after numerous ISS&P staff attempts to contact them. All in all, this led to a sample size of *n* = 317 for the survey.

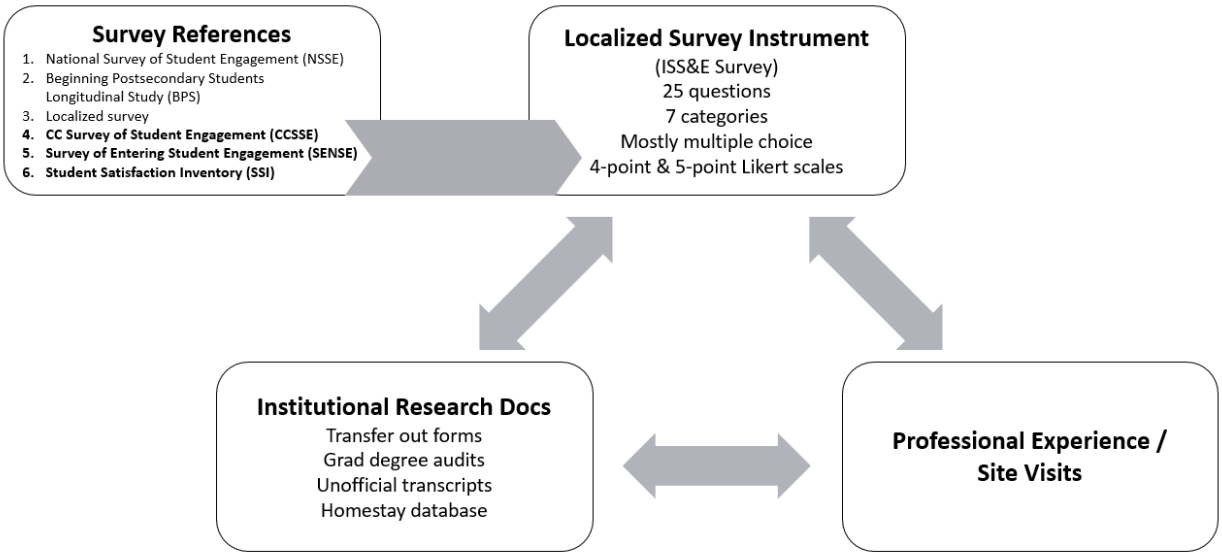
The sample size of institutional document desk research for students who departed from the community college research site during the Spring 2016 Quarter is n=106. This includes the 19 international students mentioned above that were excluded from the pool of available survey respondents because of their not continuing with enrollment at the community college. The other 87 international students that make up this sample group are those that either submitted a transfer out form (see Appendix B) or that completed their degree for graduation at the end of the Spring 2016 Quarter.

Data Sources

At the onset of this study, the research design presumed that the International Student Satisfaction & Engagement survey would collect a sufficient amount of data to evaluate the impact of institutional experiences factors on international student persistence. At face value this held true with a response rate of approximately 22% (71 out of 342), which meets the Center for Community College Student Engagement's (2016) sample size standard of 20% total enrollments for their The Community College Survey of Student Engagement (CCSSE). Nonetheless, closer examination of the respondents showed that the survey was predominantly taken by international students that can be classified as “persisters” (n = 46) and “undecideds” (n = 18) with comparatively less participation from “non-persisters” (n = 7). For this reason, the author of this study decided to supplement two additional data sources in triangulation with the survey. The second is desk research of institutional documents for students that transferred out of the community college during the Spring Quarter 2016 and the third is a combination of site visits and the investigators professional experience working in international higher education. This subsection describes these three forms of data sources as shown in Figure 5.

Figure 5

Triangulation of Data Sources



Survey instrument. To date, three surveys have been used in international student persistence research. The National Survey of Student Engagement (NSSE) (Smith, 2015), Beginning Postsecondary Students (BPS) Longitudinal Study survey (Mamiseishvili, 2012a, 2012b), and a localized survey created by Tompson and Tompson (1996). Behroozi-Bagherpour (2010) also referred to CCSSE when developing his qualitative interview questions, although he did not use CCSSE data for his study. The community college research site for this study administers two other related surveys, which are the Survey of Entering Student Engagement (SENSE) and Student Satisfaction Inventory (SSI). All six of these surveys were considered as potential data sources.

In review of the surveys used by previously studies of international student persistence, NSSE and BPS were disregarded because the community college research site does not administer these two surveys. Tompson and Tompson's (1996) self-created survey was also eliminated from contention because they did not make their survey publically available. CCSSE, SENSE, and SSI surveys were then evaluated for usability based on their inclusion of residence classification questions, most recently administration date, and number of international student responses.

Table 2

General information about CCSSE, SENSE, and SSI surveys for international students at the community college research site

Survey	Administered date	Residence identifier question	Int'l student respondents*
CCSSE	Winter 2014	Item #33	97
SENSE	Fall 2014	Item #34	57
SSI	Fall 2015	Item #109	60

* Duplicates and missing responses were removed

Ultimately, the investigator decided to customize an International Student Satisfaction & Engagement (ISSE) survey for this study's purposes in giving attention to the following:

- Data collection time constraints prevented the processing of a data inquiry request for crosschecking individual student identifiers that would link their academic achievement characteristics and longitudinal enrollment status with their associated CCSSE, SENSE, and SSI survey responses.
- The three surveys were designed for general applicability with some questions not pertaining to international students' experiences at the community college research site (e.g. international students are ineligible for financial aid)
- The three surveys are administered in randomly selected college-level courses, which excludes a large contingent of international students studying in English for Academic Purposes courses.

However, the investigator closely consulted the CCSSE, SENSE, and SSI surveys as references when creating the customized ISSE survey. Questions were selected and removed with international students' experiences in mind as well as being attentive of question wording for comprehension and interpretation by non-native English speakers. Some questions were expanded upon such as asking for the student's English course placement from when they first enrolled and accommodation type based on the community college research site's homestay program option where international students live with American families.

The ISSE survey is made up of 25 questions organized under seven categories: (a) demographics, (b) education background, (c) study motivations & goals, (d) academics, (e) support services & facilities, (f) social, and (g) summary. In total, the seven categories contain 126 variable items. The vast majority of questions were multiple choice that asked for a single response or on a grid for responses based on a 4-point and 5-point Likert scales.

Figure 6

Example of ISSE Survey Response Types for 4-point Likert Scale

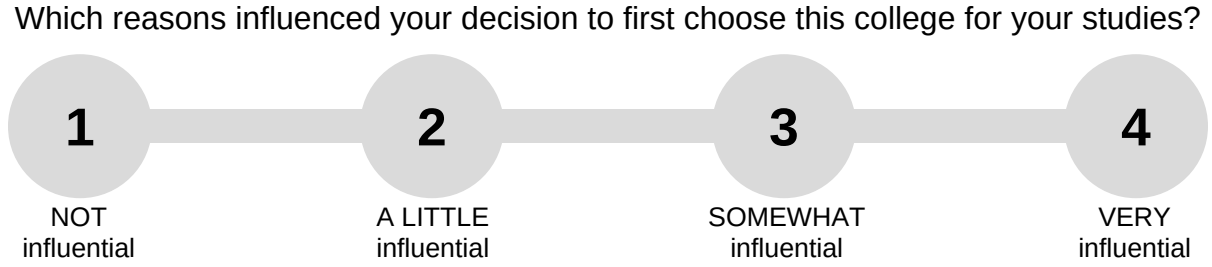
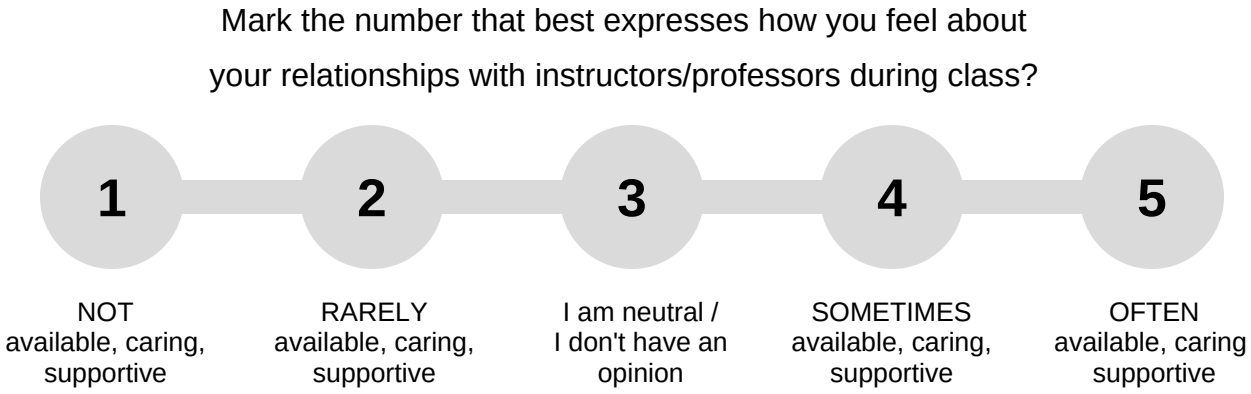


Figure 7

Example of ISSE Survey Response Types for 5-point Likert Scale



Additionally, three of the questions allowed for short answer responses (nationality, first quarter of study, and quarter of graduation for alumni). Two multiple choice questions included an “other” option for a short answer response (“How did you first learn about TCC?” and “Which of the following best describes your current housing/living situation

at TCC?"). All questions required a response except for one optional question at the end of the survey that asked participants if they had any other comments or suggestions that they would like to add.

Institutional data. Desk research documents were analyzed in attempt to gain greater insight about both persisters and non-persisters at the community college research site. Non-enrollment records, transfer out forms, and graduation degree audits were the three types of documents reviewed in cross-reference with seven variables: (a) cumulative grade point average, (b) first quarter of study, (c) total number of quarters of study, (d) number of quarters with high credit course loads, (e) number of quarters with low credit course loads, (f) number of quarters not meeting the minimum 2.0 GPA immigration requirements, and (g) English course placement at initial enrollment. The transfer out forms also provided details about some of the reasons that non-persists gave for their decision to withdrawal from the community college.

Professional experience/site visits. The investigator relied on his professional experience and site visit meetings with ISS&P office staff as resources for providing more depth to the partial views obtained from the survey instrument and institutional research. The investigator has worked in international education for over 13 years with 8 years in higher education settings and three years for the ISS&P office at the community college research site. While administrating international student services, the investigator has accumulated a wealth of experience and practical knowledge that is applicable for this study. Consultations with other ISS&P office staff also assisted with clarifying some of the information that was found missing from the institutional data documents as well as verifying that data pieces were accurate.

In sum, the following table explains the data sources used for each of the institutional experience factors and associated variables.

Table 3

Data Sources for Institutional Experience Factors and Variables

Institutional Experience Factors		Variables	Data Sources
Academic System	Formal (Academic Performance)	• Cumulative GPA • Course Load • Active participation in class	• Survey & Institutional Data • Survey & Institutional Data • Survey
	Informal (Interaction with Faculty & Staff)	• Engagement & Satisfaction with Faculty • Engagement & Satisfaction with Staff	• Survey • Survey
Social System	Formal (Campus Involvement)	• Extracurricular activities • On campus employment	• Survey • Survey
	Informal (Peer Group Interactions & Living situation)	• Peer-group interactions • Living situation	• Survey • Survey, Institutional data, & Personal experience/Site visits

Data Collection & Analysis Procedures

Permission to conduct the study was applied for through the community college's Institutional Research Board (IRB). This required submission of the IRB's Request for Approval of Research form along with the proposed survey questions, provided response choices, and statement of confidentiality. After the investigator completed a round of edits as advised by the IRB, approval was granted on March 21, 2016. The authorization letter is kept on file by the IRB with the investigator receiving a copy.

The International Student Satisfaction & Engagement survey was first drafted in Microsoft Word and then uploaded to Google Forms. A pilot survey was administered online from April 4 to April 12 involving six international student employees that work in the ISS&P office and six students in an English for Academic Purposes course. The two focus groups provided feedback for amendments to improve on question comprehension and interpretation. The full survey was delivered online between April 14 and April 30. The Google forms survey link was distributed via (a) international student email list-serve, (b) posting on the community college's international programs Facebook page, (c) promotion by the investigator during visits to English for Academic Purposes classes, and (d) flyer advertisements in the international student office.

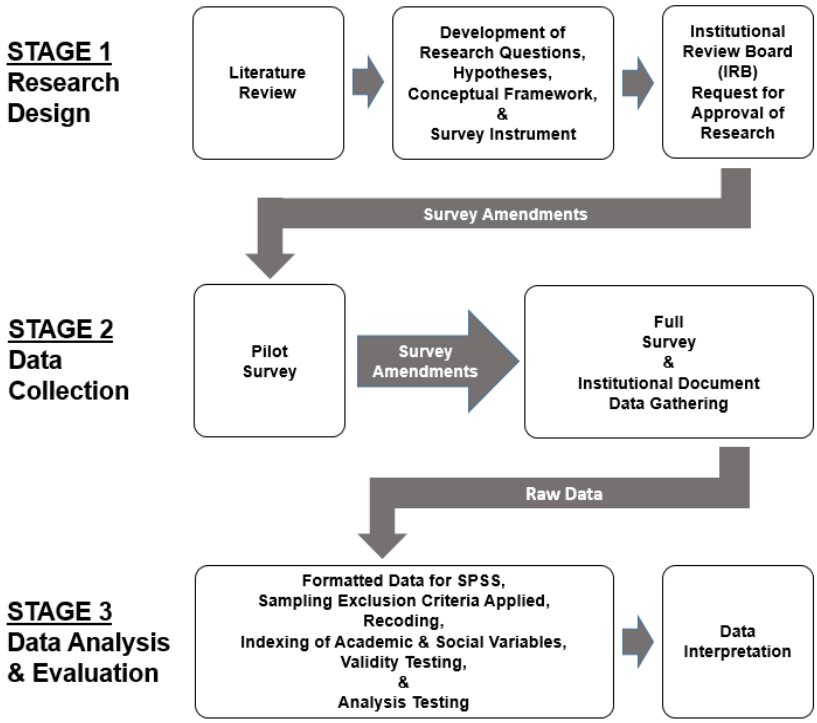
Institutional data was collected from May 2nd to June 3rd. Non-enrollment records, transfer out forms, and graduation degree audits were reviewed during this step. ISS&P staff also provided institutional data from unofficial transcripts and housing records for academic achievement and living situation variables. All personal identifiers were removed from institutional documents to maintain confidentiality.

Survey responses were downloaded from Google Forms to Microsoft Excel and formatted for IBM SPSS Statistics software package versions 23. Microsoft Excel was also used for organizing the data gathered from institutional documents and for creating codebooks as keys for data reformatting. Next, the four sampling exclusion criteria were applied (refer back to Sample Population section in this Chapter) followed by a recoding of two academic questions (3.5 [“How often]…have you not completed homework or assigned readings for a class?” and 3.14 “[How often]…have you skipped class?”) so that they were aligned in the same direction as the rest of the questions that required Likert scale response format. After that, survey questions were indexed along the lines of academic and social system categories. Finally, validity tests and inferential tests were run in SPSS for the six research hypotheses mentioned at the beginning of this chapter. The details of the validity tests are given in the next subsection as well as in Appendices C and D. The inferential tests are displayed, analyzed, and synthesized in Chapter IV.

The survey remained anonymous and confidential with the voluntarily given email addresses erased from the raw data once the winners of the gift card incentive contest collected their prizes. All identifying information for the students from the institutional document desk research was also deleted. The raw data from both the survey and institutional documents (Non-enrollment records, transfer out forms, and graduation degree audit forms) were then entered into Microsoft Excel sheets and exported to SPSS data files. After stage three was completed for data analysis and interpretation, all data files were submitted with the investigator’s findings to the IRB and Institutional Research unit for secure storage. Figure 8 flowchart outlines the sum of these data collection and analysis processes as they stem from the research design.

Figure 8

Research Process Flow Chart



Validity and Reliability

All efforts were made to establish the validity and reliability of this study. For validity, Yin (2009) distinguishes between three types when conducting case study research. The first is *construct validity* for detecting that the proper operational measures are used and that the process remains consistent at each step from the research question to the conclusions. This was sought by following similar methodology approaches employed in previous quantitative studies of international student persistence (Behroozi-Bagherpour, 2010; Kwai, 2009; Mamiseishvili, 2012a; Smith, 2015). Second, three sources of evidence were used through data triangulation via the survey instrument, document analysis, and the investigator's personal experience in consultation with colleagues during site visits to the research site (see Figure 5).

Next, establishing *internal validity* for the data collected from the triangulated sources was necessary because of the case study's explanatory research design and the causal inferences for answering the hypotheses. To accomplish this end, data from the ISSE survey and institutional documents were first tested for normality using

Skewness and Kurtosis tests, Shapiro-Wilk tests, and histograms. The results of these tests suggest non-normality with a noteworthy amount of variables having z-values for skewness outside of the ±1.96 parameters and Shapiro-Wilk p-values of < 0.05 (see Appendix C and D). Therefore, rejecting the null hypothesis and accepting the alternative hypothesis advises that non-parametric Mann-Whitney U tests and Kruskal-Wallis H tests are the appropriate measures for analysis of inferential statistics that will provide answers for this study's research questions. Lastly, the ex-post factor reporting of the author's professional experience and anecdotal evidence gathered from site visits was kept to a minimum and was primarily used to verify data from the other two sources.

Third is external validity for defining the generalizability of the case study. To an extent, this was realized through the consideration of multiple competing theories on student persistence when constructing the research questions, hypotheses, and conceptual framework that guided this study. However, external validity is not as crucial for this case study because of the single research site approach. As previously state, the author had no intention of widely applying the findings to all community college contexts, which is a point that will be discussed in more detail in the limitations and recommendations for future research sections of this paper.

Reliability was maintained by following a case-study protocol and through demonstration of the operations used for data collection and maintenance of a case study database. This is essential to ensure that "the procedures can be repeated with the same result" (Yin, 2009, p. 40). The procedural steps for this study are detailed earlier in this section including the steps taken for collecting the data. Also as previously mentioned, the data files are stored securely at the research site with the International Student Satisfaction and Engagement survey and institutional documents used for gathering the data.

Limitations

Beginning with the modifications that were made to the research design during the study (see the data sources section earlier in this chapter), a major limitation is the insufficient representation of non-persister respondents for the ISSE survey. There were only seven international students that self-reported their decision to depart from the

community college research site during or after Spring Quarter 2016. Measured against the 64 non-persisters identified through institutional document research, seven non-persister respondents account for 11%. This is insufficient for making any dependable conclusions about non-persisters from the ISSE Survey.

Additionally, there are criticisms of using a single-case study approach. Some researchers have held predispositions against case studies in arguing that there is no logical support for the scientific generalization of the findings they produce since data collection is constrained to an individual research site. However, as Yin notes, “The short answer is that case studies, like experiments, are generalizable to theoretical propositions and not to populations or universes” (2009, p. 15). In this way, and as mentioned in the preceding subsection, the author did not conduct this research with the aim of making overarching judgments about international student persistence nation-wide or even at all community colleges in Washington State. The objective was to contribute to the conversation about applying contemporary persistence theories to international student subpopulations and inspire further research for additional single-case studies, multi-case studies, and/or mixed methods approaches that would add to the depth of this growing body of knowledge.

There are also inherent limitations when conducting research quantitatively. For instance, diverse groups of people—such as the international students in this study that come from various countries—cannot be meaningfully reduced to numbers that fail to adequately account for personality characteristics like their identities, perceptions, and beliefs (Dudwick, Kuehnast, Jones, & Woolcock, 2006). Variables for academic performance are less susceptible to this criticism, but variables involving satisfaction and engagement with phenomena can be seen as dubious because they rely on a narrow selection of survey question responses as the basis for conclusions. Again, some researchers (Andrade, 2003; Attinasi, 1992) would likely say that qualitative techniques are more suitable. Particularly, in defending how interviews, focus groups, and field observations would provide more in-depth analysis of the study subjects. Yet, the author attempted to downgrade this limitation by tailoring the survey instrument for the Washington State community college research site. Additionally, the author readily admits that international student persistence studies would benefit from mixed methods

approaches that capture the benefits of both quantitative and qualitative research whether it be for local institutional research contexts or on larger scales (see the Recommendations for Future Research section in Chapter 5).

Moreover, there were unavoidable shortcomings in regards to the sample population. The primary issue was the omitting of 11% of the total international student population at the research site because of the legal restrictions that prevented those under the age of 18 from participating in the survey. U.S. Federal Regulations do contain a clause that allows minors to be included if they have permission from their parents. The challenge of surveying youth is well articulated by Pew Research Center in terms of the time and complexity of obtaining parental consent (Lenhart, 2013). These difficulties are compounded even further when it comes to parents of international students. Obstacles include language barriers, unfamiliarity with US laws, and their residing in countries at all corners of the globe. Therefore, this study could not get a full picture of the international student population at the research site.

There are also limitations for each of the data sources. Starting with the survey instrument, the validity and reliability of self-reported data are of great contention. One issue that Gonyea (2005) highlights for higher education research is social desirability bias, which is the tendency of respondents to alter their answers to give a more positive impression of themselves. The author endeavored to counterbalance against this by making the survey anonymous in attempt to solicit honest answers. However, social desirability bias still may be the reason behind there being a high amount of persisters and undecided student survey participants compared to non-persisters as well as the high overall volume of positive responses. Additionally, anonymity also risks some inaccuracies in data that would be avoided if students' responses were tied to their names and/or student identification numbers. For example, some survey respondents may not correctly remember their cumulative GPA or number of quarters they studied at the community college. Thirdly, the question types in the survey may have caused confusion for some international students, especially those with lower English language comprehension. The pilot survey was an effort to collect feedback about wording changes for better clarification, but the study would have benefited if the author had more time to conduct a more expansive pilot survey.

Additionally, 5-point Likert scales are not without reproach either, especially when answers are required and the “3” middle point response is “I’m neutral / I do not have an opinion”. Removing the possibility for omitted responses eliminates any missing data. Giving the option for an impartial answer between the “often” and “not/never” extremes also aims to make it acceptable for respondents to say they do not know or do not have enough experience/information to answer the question. However, the consequence is that a situation is created where the means cannot be counted. This calls into question ISSE survey items “25”, “29”, and “31” (see Appendix A) that were used for measuring respondents’ satisfaction with faculty, staff, other students, and their living situation. Accordingly, the results for these four variables are suspect as well.

Data collection from institutional documents at the community college research site also has potential for error. Primarily, this is because of the ISS&P office’s use of paper-based forms and the community college research site’s recent switch to a new online software operation system with limited queries established for international student data at the time of the study. Because of this, the author had to gather data by hand and manually input it into Microsoft Excel. In attempt to overcome this limitation, the investigator visited the sight and double-checked the data with ISS&P office staff. Furthermore, for transfer out forms, there is also a level of social desirability bias that must be assumed. International students may be uncomfortable giving truthful answers for why they are leaving a college out of fear of repercussions. To illustrate, if an international student is moving because they found employment, then they would be wise to not inform this because their F-1 visa could be terminated for violating immigration laws that prohibit international student from working off-campus. Native culture is also a factor. For example, some Asian countries have long traditions of honor-shame culture with deep admiration for teachers and stigmatization for failing. International students that grew up with these social pressures may not be frank about their academic experiences out of respect for their teachers or the threat of personal humiliation.

Lastly, it must be made clear that the referencing of the investigator’s professional experience and research site visits did not follow strict scientific method protocols. The investigator’s career credentials are readily verifiable via online searches

and background/reference check verifiable. However, meetings with community college research site staff were informal and not recorded or transcribed. The investigator also did not keep any field log books of his daily visits to the community college research site. Information gathered from this data source were loosely supplemental to crosscheck data from the quantitative sources and therefore should be considered as personal communications at best.

CHAPTER IV

Research Findings

To reiterate once more, the objective of this study is to assess the effects of institutional experience factors on international student persistence at a public community college in Washington State. The main research question asks: How do institutional experience factors relate to international students' decision to persist with their degree studies at a public community college in Washington State for the Spring 2016 Quarter? From this main research question, two dimensions, four sub dimensions, five sub research questions, and five hypotheses were established. As a reference, here again is Table 1 from Chapter 1.

Table 1

Research dimensions, sub dimensions, sub research questions, and hypotheses

Dimensions	Sub Dimensions	Sub Research Questions	Hypotheses
Academic System	Formal (Academic Performance)	How does academic performance relate to international student persistence?	There is a significant statistical difference between persisters and non-persisters in terms of cumulative GPA, course load, and active participation in class.
	Informal (Interaction with Faculty & Staff)	How do interactions with faculty and staff relate to international student persistence?	There is a significant statistical difference between persisters and non-persisters in terms of their satisfaction and engagement with faculty and staff.
Social System	Formal (Extracurricular Activities)	How does involvement in extracurricular activities and on-campus employment relate to international student persistence?	There is a significant statistical difference between persisters and non-persisters in terms of participating in extracurricular activities and on-campus employment.
	Informal (Peer Group Interactions & Living Situation)	How do interactions with other students relate to international student persistence?	There is a significant statistical difference between persisters and non-persisters in terms of their satisfaction and engagement with other students.
		How do interactions with one's living situation relate to international student persistence?	There is a significant statistical difference between persisters and non-persisters in terms of their engagement and satisfaction with their living situation.

This chapter begins by presenting the descriptive and frequency statistics for the two data sources that were used to test these hypotheses in the pursuit to provide answers for these questions. It depicts the variable value percentages first for the ISSE survey respondents and then the international student subgroup that was earmarked in

the institutional document desk research. Next, the datasets were further examined through inferential statistics of Kruskal-Wallis H tests for the ISSE survey instrument and Mann-Whitney U tests for the institutional document desk research.

Descriptive Statistics of Frequency Distribution for ISSE Survey Respondents

A brief introduction for general demographics of the international students that responded to the ISSE survey was given in the *Sample Population* section of *Chapter III Methods*. Here is a summary of those points:

- 416 full-time international students on F-1 visas enrolled at the community college for Spring 2016 Quarter.
- ISSE survey population sample size (n = 317) was reduced by four sampling exclusion criteria that participants must be (a) degree-seekers, (b) not on an official leave of absence, (c) not having been terminated, dropped, or unenrolled from classes, and (d) 18 years or older.

Among the total number of international student survey respondents (n=71), 28 identified themselves as male (39.4%) and 43 as female (60.6%). 34 (47%) or nearly half of the international students surveyed were ages 18 to 20 years old while 29 (40.8%) were 21 to 25 years old and 8 (11.3%) were 26 to 35 years old. They also represent 21 nationalities with one student's country of origin being missing. Of these, the majority consisting of 15 from China (21.1%), 15 from Vietnam (21.1%), and 11 from South Korea (15.5%). The number of quarters the international student respondents have studied at the community college range from 1 quarter to 7 or more quarters as shown in Figure 9.

ISSE Survey question item #17, "Do you plan to finish a two-year degree at TCC?", was asked to determine the respondent's decision to persist or depart with three response options of "Yes", "No", and "Maybe" provided (see Appendix A). 46 (64.8%) respondents said "Yes", 7 (9.9%) respondents said "No", and 18 (25.4%) respondents said "Maybe", which led to these three groups being classified as persisters, non-persisters", and "undecideds" respectively.

Figure 9

Descriptive Statistics for International Student Characteristics as a Percentage of the Total Sample (ISSE Survey)

	Persisters		Non-persisters		Undecideds	
Characteristics	(n=46)	%	(n=7)	%	(n=18)	%
Sex						
Male	20	43.5	1	14.3	7	38.9
Female	26	56.5	6	85.7	11	61.1
Age						
18-20 years old	24	52.2	3	42.9	7	38.9
21-25 years old	18	39.1	3	42.9	8	44.4
26-35 years old	4	8.7	1	14.3	3	16.7
Nationality						
China	11	23.9	0	0.0	4	22.2
Vietnam	12	26.1	0	0.0	3	16.7
South Korea	6	13.0	1	14.3	4	22.2
18 other nationalities	17	37.0	6	85.7	7	38.9
No. of enrolled qtrs.						
1 qtr.	5	10.9	2	28.6	3	16.7
2 qtrs.	3	6.5	0	0.0	3	16.7
3 qtrs.	7	15.2	2	28.6	3	16.7
4 qtrs.	6	13.0	1	14.3	2	11.1
5 qtrs.	7	15.2	1	14.3	2	11.1
6 qtrs.	4	8.7	1	14.3	2	11.1
7 or more qtrs.	14	30.4	0	0.0	3	16.7

Academic System Variables. 10 questions items from the ISSE survey were used to gather data for the sub dimension of academic performance in the three categories of grade point average, course load, and active participation in class. International student respondents were provided with five possible answer choices for their cumulative GPA, which were “I don’t know”, “0-1.9”, “2.0-2.5”, “2.6-3.5”, and “3.6-4.0”. Course load was based on the number of quarters the students took low credit (11 credits or less) and high credit (16 credit hours or more). The five available response for these two questions were “0 quarters”, “1 quarter”, “2 quarters”, “3 quarters”, and “4 quarters or more”. For active engagement in class, a 5-point Likert scale of “never”, “not often/almost never”, “sometimes”, “often” and “very often” was used for 7 questions as shown in *Table 4*.

Table 4

Percentages of ISSE Survey Respondents for Academic Performance Variables (Cumulative GPA, Course Load, and Active Participation in Class)

	Persisters		Non-persisters		Undecideds	
ISSE Items	(n=46)	%	(n=7)	%	(n=18)	%
Cumulative GPA						
I don't know	3	6.5	0	0.0	7	38.9
0 – 1.9	1	2.2	0	0.0	0	0.0
2.0 – 2.6	4	8.7	1	14.3	1	5.6
2.7 – 3.5	16	34.8	3	42.9	6	33.3
3.6 – 4.0	22	47.8	3	42.9	4	22.2
Course Load: "2 qtrs", "3 qtrs", and "4 qrts or more"						
Studied 11 credit hours or less (low credit)	10	21.7	2	28.6	6	33.3
Studied 16 credit hours or more (high credit)	22	47.8	2	28.6	6	33.3
Frequency of participation: "very often" and "often"						
Asked questions in class/contributed to class discussions	30	65.2	5	71.4	11	61.2
Gave a speaking presentation in front of class	25	54.3	4	57.1	11	61.2
Prepared 2 or more drafts of a paper or assignment	36	78.3	5	71.4	15	83.3
Worked on a paper or project integrating various resources	38	82.6	5	71.4	15	83.3
Worked with other students on an assignment/project in class	38	82.6	4	57.1	12	66.6
Not completed homework or assigned readings for a class	7	15.2	2	28.6	10	55.6
Skipped class	14	30.4	3	42.9	6	33.3

A total of 11 question items from the ISSE survey were used to gather data for the sub dimensions of engagement and satisfaction with faculty and staff. Six questions were for engagement, which was measured in the same way as the sub dimensions of active participation in class with 5-point Likert scale responses of "never", "not often / almost never", "sometimes", "often" and "very often". A note for staff service divisions, the ISS&P office provides academic advising/counseling and career services while other individual departments manage the skills labs. A prompt was provided for the survey respondents as a reminder for each of the skill / tutoring labs including the Writing Center, Math Advising Resource Center (MARC), Business Education Center, and Information Commons. The remaining 5 questions for faculty and staff satisfaction also used 5-point Likert scales that evaluated level of "availability, caring, and support" show as either "1 - not", "2 - rarely", "3 - I am neutral / I don't have an opinion", "4 - sometimes" and "5 - often".

Table 5

Percentages of ISSE Survey Respondents for Interaction with Faculty and Staff Variables (Engagement and Satisfaction)

ISSE Items	Persisters (n=46)	%	Non-persisters (n=7)	%	Undecideds (n=18)	%
Frequency of participation: "very often" and "often"						
Communicate with an instructor by email or instant message	34	73.9	6	85.7	10	55.5
Discussed grades or assignments with an instructor	27	58.7	5	71.4	12	66.6
Discussed study plans or career goals with an instructor	22	47.8	4	57.1	9	50.0
Frequency of participation: "very often" and "often"						
Academic advising/counseling	24	52.1	6	85.7	11	61.1
Career assistance	13	28.3	5	71.5	8	44.4
Skill / tutoring labs	31	67.4	3	42.9	12	66.6
Frequency of satisfaction: "often" and "sometimes" available, caring, and supportive						
Your professors while in class	41	89.1	6	85.7	15	83.4
Your professors outside of class	37	80.4	6	85.7	12	66.6
Other professors	32	69.6	5	71.4	8	44.4
Frequency of satisfaction: "often" and "sometimes" available, caring, and supportive						
Staff in the ISS&P office	39	84.8	7	100	16	88.9
Staff in other offices	37	80.5	5	71.4	16	88.9

***Social System Variables*.** Two questions items from the ISSE survey were used to gather data for the sub dimension of extracurricular activities in the two categories of extracurricular activities and on-campus employment. International student respondents were provided with five possible answer choices for each based on the number of hours they participation, which were "0 hours", "1-5 hours", "6-10 hours", "11-15 hours", "16-20 hours", and "21 or more hours". The last three choices were combined to create a single "6 or more hours" identifier due to the lack of responses for the higher time amounts.

Table 6

Percentages of ISSE Survey Respondents for Extracurricular Activities Variables (Extracurricular Activities and On-Campus Employment)

ISSE Items	Persisters (n=46)	%	Non-persisters (n=7)	%	Undecideds (n=18)	%
Frequency of participation:						
How many hours a week do you participate in extracurricular activities? (clubs, student government, publications, sports, other events, etc.)						
0 hours	11	23.9	1	14.3	6	33.3
1-5 hours	27	58.7	6	85.7	10	55.6
6 or more hours	8	17.4	0	0.0	2	11.4

ISSE Items	Persisters (n=46)	%	Non-persisters (n=7)	%	Undecideds (n=18)	%
Frequency of participation:						
How many hours a week do you work for pay?						
0 hours	27	58.7	3	42.9	11	61.1
1-5 hours	10	21.7	3	42.9	3	16.7
6 or more hours	9	19.5	1	14.3	4	22.4

Eight question items from the ISSE survey were used to gather data for the sub dimensions of peer-group interaction and living situation. Peer-group interactions were also evaluated on 5-point Likert scale with responses of “never”, “not often/almost never”, “sometimes”, “often” and “very often”. Living situation was defined by the most common accommodation types for international students attending including “college provided homestay”, “homestay through an outside company/not the college”, “living with family”, renting a room in a house or apartment with roommates”, and “renting a room in a house or apartment and living alone”. An “other” option was provided, but no other responses were given. Because the community college research site administers its own homestay program, this was isolated into one variable with the other accommodation types being combined into a second variable (see Table 7).

Lastly, satisfaction for both peer-group interactions and living situation variables were gauged using a 5-point Likert scale for level of being friendly, supportive, and sense of belonging. Students were asked the number that best expresses how they feel about their relationships with (a) American students, (b) international students, and (c) the people they live with. From lowest to highest, the responses were “1 - not”, “2 - rarely”, “3 - I am neutral / I don’t have an opinion”, “4 - sometimes” and “5 - often”. Survey respondents who reported that they lived alone were still considered for this variable set because of a prompt for them to “comment about your neighbors”.

Table 7

Percentages of ISSE Survey Respondents for Interpersonal Relationships Variables (Peer-Group Interactions and Living Situation)

ISSE Items	Persisters (n=46)	%	Non-persisters (n=7)	%	Undecideds (n=18)	%
Frequency of participation: “very often” and “often”						
Worked with other students on an assignment or project outside of class	29	63.1	5	71.4	11	61.1

ISSE Items	Persisters (n=46)	%	Non-persisters (n=7)	%	Undecideds (n=18)	%
Tutored or taught other students (paid or voluntary)	20	43.5	5	71.4	8	44.5
Had conversations with students of a different backgrounds than your own (race, ethnicity, religion, political opinions, etc.)	33	71.8	5	71.4	10	55.5
Frequency of satisfaction: "often" and "sometimes" friendly, supportive, sense of belonging"						
American students	35	76.1	7	100	14	78.8
International students	39	84.8	6	85.7	12	66.6
Frequency of participation:						
College managed homestay	17	37.0	3	42.9	2	11.1
Other accommodation	31	66.6	4	57.1	16	88.9
Frequency of satisfaction: "often" and "sometimes" friendly, supportive, sense of belonging"						
The people you live with	32	70.2	7	85.7	11	61.1

Descriptive Statistics of Frequency Distribution for Institutional Document Data

A brief introduction for general demographics of the international students that were the subject of institutional document desk research was given in the *Sample Population* section of *Chapter III Methods*. The sample size was n=106 out of the total enrollment of 416 fulltime international students on F-1 visas attending class for the Spring 2016 Quarter. However, an important note is that 19 of this international student subgroup were not included in the head count of 416 because they were identified as terminated, dropped from classes, or not enrolled. For the other 87 students, 42 of them completed an associate degree and graduated from the community college. This lead to a sample population of persisters as n=42 and non-persisters as n=64.

Amidst the group of international students observed in the institutional documents, 56 identified as male (52.8%) and 50 as female (47.2%). Two students (1.9%) were under 18 years old while 46 (43%) were ages 18 to 20, 45 (42.5%) were ages 21 to 25 and 13 (12.3%) were 26 to 35 years old. Together they also represent 22 nationalities with the majority again come from Mainland China (43 at 40.6%), Vietnam 920 at 18.9%), and South Korea (10 at 9.4%). In regards to the length of their enrollment at the community college, this international student subgroup consisted of 15 (14.2%) who studied for 0-1 quarters, 43 (40.5%) who studied for 2-6 quarters, and 48 (45.3%) who studied for 7 or more quarters.

Table 8

Descriptive Statistics for International Student Characteristics as a Percentage of the Total Sample (Institutional Documents)

	Persisters		Non-persisters	
Characteristics	(n=46)	%	(n=7)	%
Sex				
Male	19	45.2	37	57.8
Female	23	54.8	27	42.2
Age	0	0.0	2	3.1
18-20 years old	19	45.2	27	42.2
21-25 years old	20	47.6	25	39.1
26-35 years old	3	7.1	10	15.6
Nationality				
China	15	35.7	28	43.8
Vietnam	6	14.3	14	21.9
South Korea	6	14.3	4	6.3
18 other nationalities	15	35.7	18	28.0
No. of enrolled qtrs.				
1 qtr.	0	0.0	15	23.4
2 qtrs.	0	0.0	9	14.1
3 qtrs.	0	0.0	10	15.6
4 qtrs.	0	0.0	5	7.8
5 qtrs.	0	0.0	8	12.5
6 qtrs.	7	16.7	4	6.3
7 or more qtrs.	35	83.3	13	20.3

The limits of institutional documents allowed for this data source to only provide information for three variables. Data for the first two, Cumulative GPA and course load, was collected from unofficial academic transcripts and followed the same frequency divisions used for the ISSE Survey.

Table 9

Percentages of Institutional Document International Students for Academic Performance Variables (Cumulative GPA and Course Load)

	Persisters		Non-persisters	
Institutional Document Items	(n=42)	%	(n=64)	%
Cumulative GPA				
0.0 – 1.9	0	0.0	27	42.2
2.0 – 2.6	3	7.1	11	17.2
2.7 – 3.5	19	45.3	15	23.4
3.6 – 4.0	20	47.6	11	17.2
Course Load: "2 qtrs", "3 qtrs", and "4 qrts or more"				
Studied 11 credit hours or less (low credit)	13	31.0	15	23.4
Studied 16 credit hours or more (high credit)	31	73.8	17	25.0

The third variable obtained from institutional documents was for the living situation sub dimension. Data for this variable was acquired from a database

maintained by the ISS&P office for all international students that participate in the community college's homestay program. Persisters and non-persisters were crosschecked in the database to determine whether or not they had ever been in homestay and if they were in homestay at the time of their departure from community college.

Table 10

Percentages of Institutional Document International Students for Interpersonal Relationships (Living Situation)

ISSE Items	Persisters (n=42)	%	Non-persisters (n=64)	%
Frequency of participation:				
Lived in the college managed homestay for at least 1 qtr	21	50.0	14	21.9
Lived in the college managed homestay for at least 1 year (3 qtrs)	12	28.6	2	3.1
Living in the college managed homestay in Spring 2016 Quarter	2	4.8	0	0.0

Statistical Analysis for the Research Questions

In addition to the aforementioned descriptive statistics, this study inspects inferential statistics to determine if there are group differences and predictors between institutional experience factors and international student persistence. As explained in Chapter III, validity tests (skewness, kurtosis, and Shapiro-Wilk) were conducted on the categorical variables, which revealed that non-parametric tests were the appropriate inferential statistic test to use because of the non-normality of the data. For the ISSE survey instrument data, Kruskal-Wallis H tests were employed to include all three student groups of persisters, non-persisters, and undecideds. This is also in consideration of the ISSE survey's ordinal Likert scale question responses. For the institutional document data, Mann-Whitney U tests were utilized for the persister and non-persister dichotomy as well as the interval variables of precise cumulative GPA and nominal variables of credit load and living situation. These inferential statistics are organized in order for each of the five research question as follows.

Question #1: Academic performance

Cumulative GPA. A Kruskal-Wallis H test was performed to inspect if there were differences in ISSE survey respondents' reporting of their cumulative GPA levels between the three student groups of persisters (n = 46), non-persisters (n = 7) and "undecideds" (n = 18). Visual review of the boxplot determined that the distribution of cumulative GPA scores were different in shape for all groups. Test results found that there was a statistical significance for cumulative GPA, $X^2(2) = 6.872$, p = .032. Consequently, a post-hoc test was conducted to discover where the dissimilarities lie between the groups. Pairwise comparisons showed that the statistically significant difference exists for persisters (mean rank = 3.15) and undecideds (mean rank = 2.00), but not for persisters and non-persisters or undecideds and non-persisters (mean rank = 3.14).

A Mann-Whitney U test was performed to inspect if there were differences in cumulative GPA levels between persisters (n = 42) and non-persisters (n = 64) as identified by institutional document research. Visual review of the boxplot determined that the distribution of cumulative GPA scores for the two groups were also different in shape. Cumulative GPA for persisters (mean rank = 72.01) were noticeably higher than non-persisters (mean rank = 43.51), with statistically significant difference shown by U = 2121.5, z = 5.025, p = .000.

Low credit course load. A Kruskal-Wallis H test was performed to inspect if there were differences in ISSE survey respondents' reporting of their low credit course load between the three student groups of persisters (n = 46), non-persisters (n = 7) and undecideds (n = 18). Visual review of the boxplot determined that distributions of low credit course load scores was fairly similar for all student groups. Therefore, median results were assessed, which showed slight incremental rises from non-persisters (1.00) to persisters (1.22) and undecideds (1.50), but no statistical significance in $X^2(2) = 6.79$, p = .712.

A Mann-Whitney U test was performed to inspect if there were differences in low credit course load between persisters (n = 42) and non-persisters (n = 64) as identified by institutional document research. Visual review of the boxplot determined that the distribution shape of low credit course load scores for the two groups were divergent.

Low credit course loads for persisters (mean rank = 66.70) were noticeably higher than for non-persisters (mean rank = 44.84), with statistically significant difference shown by $U = 1898.5$, $z = 3.765$, $p = .000$.

High credit course load. A Kruskal-Wallis H test was performed to inspect if there were differences in ISSE survey respondents' reporting of their low credit course load between the three student groups of persisters (n = 46), non-persisters (n = 7) and undecideds (n = 18). Visual review of the boxplot determined that the distribution shape of high credit course load scores were divergent for all groups. Mean ranks imply that persisters (2.26) placed higher than non-persisters (1.57) or undecideds (1.50), but no statistical significance in $X^2(2) = 2.3$, p = .317.

A Mann-Whitney U test was performed to inspect if there were differences in high credit course load between persisters (n = 42) and non-persisters (n = 64) as identified by institutional document research. Visual review of the boxplot determined that the distribution shape of high credit course load scores for the two groups were divergent. High credit course loads for persisters (mean rank = 72.75) were again noticeably higher than for non-persisters (mean rank = 40.87), with statistically significant difference shown by $U = 2152.5$, $z = 5.446$, $p = .000$.

Active participation in class. A Kruskal-Wallis H test was performed to inspect if there were differences in ISSE survey respondents' reporting of their low credit course load between the three student groups of persisters (n = 46), non-persisters (n = 7) and undecideds (n = 18). Visual review of the boxplot determined that distributions of active participation in class scores were fairly similar for all student groups. Therefore, median scores were checked, which showed persisters (3.000) and undecideds (3.071) ranking faintly higher than non-persisters (2.714), but no statistical significance in $X^2(2) = .584$, p = .747.

Question #2: Interactions with faculty and staff

Faculty and staff engagement. A Kruskal-Wallis H test was performed to inspect if there were differences in ISSE survey respondents' reporting of their engagement with faculty and staff between the three student groups of persisters (n = 46), non-persisters (n = 7) and undecideds (n = 18). Visual review of the boxplot determined that distribution scores for both engagement with faculty and engagement

with staff were divergent in shape across the three student groups. In comparison, engagement with faculty for persisters (mean rank = 2.6594), non-persisters (mean rank = 3.0952), and undecideds (mean rank = 2.6481) was higher in comparison to their engagement with staff (mean ranks = 1.8768, 2.3333, and 1.9815 respectively). Outcomes of $X^2(2) = 1.591$, p = .451 for engagement with faculty and $X^2(2) = 2.080$, p = .353 for engagement with staff indicate no significant statistical differences for either variable.

Faculty and staff satisfaction. A Kruskal-Wallis H test was performed to inspect if there were differences in ISSE survey respondents' reporting of their satisfaction with faculty and staff between the three student groups of persisters (n = 46), non-persisters (n = 7) and undecideds (n = 18). Visual review of the boxplot determined that distributions scores for both satisfaction with faculty and satisfaction with staff were divergent in shape across the three student groups. In comparison, satisfaction with faculty for persisters (mean rank = 4.268), non-persisters (mean rank = 4.381), and undecideds (mean rank = 4.074) were close in proximity. Satisfaction with staff also had similar proximities for persisters (mean ranks = 4.272), non-persisters (mean rank = 4.500), and undecideds (mean rank = 4.389). Readings of $X^2(2) = 1.274$, p = .529 for satisfaction with faculty and $X^2(2) = .520$, p = .771 for satisfaction with staff denote that there are no significant statistical differences for these variables as well.

Question #3: Extracurricular activities

Extracurricular activities. A Kruskal-Wallis H test was performed to inspect if there were differences in ISSE survey respondents' reporting of their participation levels for extracurricular activities between the three student groups of persisters (n = 46), non-persisters (n = 7) and undecideds (n = 18). Visual review of the boxplot determined that distribution of on-campus activity scores were divergent in shape across the three student groups. Mean ranks for persisters (1.04), non-persisters (0.86), and undecideds (0.94) all registered close in range with $X^2(2) = .770$, p = .681 also showing no statistically significant difference.

On-campus employment. A Kruskal-Wallis H test was performed to inspect if there were differences in ISSE survey respondents' reporting of their participation levels for on-campus employment between the three student groups of persisters (n = 46),

non-persisters (n = 7) and undecideds (n = 18). Visual review of the boxplot determined that distribution of on-campus employment scores were divergent in shape across the three student groups. Mean ranks for persisters (0.85), non-persisters (1.00), and undecideds (0.94) measuring nearly the same again and $X^2(2) = .329$, p = .848 also exhibiting no statistically significant difference.

Question #4: Interactions with peer groups

Peer-group engagement. A Kruskal-Wallis H test was performed to inspect if there were differences in ISSE survey respondents' reporting of their engagement with other students between the three student groups of persisters (n = 46), non-persisters (n = 7) and undecideds (n = 18). Visual review of the boxplot determined that distribution of peer-group engagement scores were divergent in shape across the three student groups. Mean ranks suggest marginally higher engagement with other students for non-persisters (3.143) than for persisters (2.609) and undecideds (2.500), but no statistical significance in $X^2(2) = 2.507$, p = .285.

Peer-group satisfaction. A Kruskal-Wallis H test was performed to inspect if there were differences in ISSE survey respondents' reporting of satisfaction levels with other students between the three student groups of persisters (n = 46), non-persisters (n = 7) and undecideds (n = 18). Visual review of the boxplot determined that distribution of peer-group satisfaction scores were divergent in shape across the three student groups. Mean ranks again suggest marginally higher satisfaction with other students for non-persisters (4.571) than for persisters (4.196) and undecideds (4.028), but no statistical significance in $X^2(2) = 1.988$, p = .370.

Question #5: Living situation

Living situation engagement. A Kruskal-Wallis H test was performed to inspect if there were differences in ISSE survey respondents' reporting of engagement with their living situation between the three student groups of persisters (n = 46), non-persisters (n = 7) and undecideds (n = 18). Visual review of the boxplot determined that distribution of living engagement scores were divergent in shape across the three student groups. Mean ranks allude to non-persisters (3.143) having slightly more engagement with other students than persisters (2.609) or undecideds (2.500), but no statistical significance in $X^2(2) = 4.489$, p = .106.

A Mann-Whitney U test was performed to inspect if there were differences in living situation engagement between persisters (n = 42) and non-persisters (n = 64) as identified by institutional document research. Visual review of the boxplot determined that the distribution of living situation engagement scores for the two groups were divergent in shape. Living situation engagement for persisters (mean rank =.277) was noticeably higher than for non-persisters (mean rank = .833) with statistically significant difference shown by $U = 1787$, $z = 3.444$, $p = .001$.

Living situation satisfaction. A Kruskal-Wallis H test was performed to inspect if there were differences in ISSE survey respondents' reporting of satisfaction levels with their living situation between the three student groups of persisters (n = 46), non-persisters (n = 7) and undecideds (n = 18). Visual review of the boxplot determined that distribution of living situation satisfaction scores were divergent in shape across the three student groups. Mean ranks show non-persisters (1.429) and persisters (1.370) being minutely closer in satisfaction with their living situation than undecideds (1.111), but no statistical significance in $X^2(2) = .809$, p = .667.

CHAPTER V

Discussion and Conclusions

This final chapter proposes insights for the study's main research question through answers to the five sub research questions that arose from the data analysis in Chapter IV. A summary of results is presented followed by discussion of these results in the context of the knowledge base on international student persistence at U.S. higher education institutions. In closing, conclusions offer final thoughts regarding the implications that this study has for practice and recommendations for future research.

Summary of Findings

The descriptive frequency and inferential statistics in Chapter IV laid the groundwork for offering answers to this study's five research questions. The major findings are summarized as follows.

Nonparametric tests:

- Data from both the ISSE survey and institutional documents indicate that there is a statistically significant relationship between cumulative GPA and international students' decision to persist with their studies at the community college research site.
- Data from institutional documents suggests that there is a statistically significant relationship between persisters and non-persisters in terms of their course loads and living situation engagement. Specifically, that persisters had more quarters of high credit and low credit course loads as well as greater participation in the college managed homestay program.
- There are no statistically significant differences for the remaining academic system and social system variables of interaction with faculty and staff, extracurricular activities, on-campus employment, peer-group interaction, and living situation.

Descriptive and frequency statistics:

- Undecideds had higher percentages of not knowing their cumulative GPA and not completing homework or assignments for a class. They also had comparatively lower levels of engagement with professors outside of class, interaction with students from different backgrounds, involvement in

extracurricular activities, participation in the community college's homestay program, and were less satisfied with other international students as well as their living situation.

- Persisters had a higher percentage of working on assignments with other students in class and had a marginally higher number of them participated in extracurricular activities 6 hours or more a week.
- Non-persisters skipped class slightly more often, but spent a greater amount of time receiving academic advising/counseling, career assistance, and tutoring other students while also having a noticeably higher level of satisfaction with American students and their living situation.
- All three student groups reported high levels of satisfaction with their professors while in class and with staff in both the ISS&P office and other offices.

Discussion

From the literature, there is a general consensus that academic integration is a predictor of student persistence. Evidence for this contention extends to both American domestic students and international students as well as within varying U.S. higher education institution contexts. In short, that progressive academic performance is a strong motivator for students to stay enrolled at their present college or university. Persistence theories have also looked at how social integration on campus could be supportive of retaining students and reducing attrition; however, results from studies for this dimension are not as compelling. To a certain extent, social integration has stronger ties for domestic students at residential universities as opposed to commuter colleges where campus life outside the classroom appears to be less influential. The importance of social integration for international students in any higher education institutional setting may also seem intuitive as a means of support for adapting to their new living and study situation in a foreign country. Nonetheless, the small amount of international student persistence research concerned with social integration factors has not produced a definitive association.

All told, the major findings from this study are largely consistant with the conclusions reached in previous studies of international student persistence. Analysis of

descriptive frequency and inferential statistics for the ISSE survey and institutional document data sources confirms that there is a perceivable connection between some of the variables within the formal academic system and informal social system and international student persistence at the community college research site for the Spring 2016 Quarter. On the contrary, no established relationship could be found for variables related to the informal academic system as well the informal and formal social system. Each of these dimensions will be discussed in further detail.

Formal academic system variables. Aside from being in agreement with previous studies' findings (Behroozi-Bagherpour, 2010; Kwai, 2009; Mamiseishvili, 2012a, 2012b; Smith, 2015), it should not come as a complete surprise that cumulative GPA is a predictor of international student persistence. A related circumstance pertaining only to international students is that F-1 visas for full-time study at U.S. colleges or universities have a minimum requirement of 2.0 GPA for each quarter. When an international student fails to meet this condition for consecutive quarters, they must either transfer to another U.S. higher education institution or leave the country. This is one probable reason why nearly all persisters placed above the 2.0 GPA line while a significant amount of non-persisters placed below, especially for those that submitted a transfer out request form to the ISSP office (see Table 4 and Table 9).

An interesting finding for this sub dimension is that persisters had more quarters of high credit and low credit course loads than non-persisters and undecideds. High credit may seem like a natural conclusion under the assumption that the more classes a student takes, the more integrated they are into the academic system. The converse being that low credit course loads may lead to less academic integration. If this was true, then non-persisters and undecideds should have had more quarters of low credit course loads than persisters. A speculation for why this result occurred may be that persisters pay greater attention to their course loads. Perhaps, they take extra classes during one quarter because they perceive the combined difficulty of the courses to be manageable and then reduce the number of course the next quarter to focus on a class they hear is extremely challenging. This form of study planning is a component of academic success.

By the same token, the higher percentage of undecided students that admitted to not knowing know their cumulative GPA and not completing homework or assignments for a class may reveal the importance of study planning as well. At the very least, it is wise for students to always have an approximation of their cumulative GPA each quarter not just for ensuring that they are meeting visa requirements, but also for their study planning. Instead of the ISSE survey asking for precise GPA score it used four band categories (see table 4) so respondents could have an easier time of estimating. Combined, a student not knowing their own cumulative GPA and not completing readings or assignments could be signs that they are not particularly concerned with their academic performance. If the undecideds who responded in this way ultimately decide to depart from the community college research site, it would give further credence for the importance of academic planning and early indicators of at-risk students.

Initially, the author of this study did find it unexpected that no significantly different relationship was found between active participation in class and persistence. The original postulation was that persisters were likely to be more involved in their courses—such as asking questions, contributing to discussions, and giving presentations—and thus having a higher level of academic integration; however, this was not the case. Persisters, non-persisters, and undecideds reported similar frequencies of participation in class for the seven items in this category. The only minor deviations were that persisters reported they worked more often with other students on an assignment/project in class and non-persisters had a slightly higher rate of skipping class. But, these two occurrences did not overshadow the overall lack of statistical differences for the active participation in class category.

Informal academic system variables. Numerous experts (Korobova, 2012; Mesidor & Sly, 2016; Mok, 2013; Zhang, 2016) point to the impact that interactions with faculty and staff have on shaping international students' experiences at U.S. higher education institutions. Faculty and staff are important influences for international students as they adapt to diverse cultures, language barriers, and western-style classroom environments that differ from those they are accustom to in their home country. Simply stated, international students have a greater chance of academic and

social adjustment if they have supportive experiences from their professors both inside and outside the classroom.

In this regard, one might anticipate that persisters would exhibit higher levels of satisfaction and engagement with faculty and staff compared to non-persisters and undecideds. Nevertheless, analysis of inferential statistics found no overall significant difference between these international three student groups. Alternatively, descriptive statistics highlight four areas of consideration. First, undecideds (55.5%) had a noticeably lower rate of communication with their instructors by email or instant message compared to persisters (73.9%) and non-persisters (85.7%). Second, non-persisters sought academic advising/counseling (85.7%) and career assistance (71.5%) far more often than persisters (52.1% and 28.3%) and undecideds (61.1% and 44.4%). Third, persisters (67.4%) and undecideds (66.6%) visited skill/tutoring labs more frequently than non-persisters (42.9%). Fourth, for the most part, persisters and non-persisters were quite similar in sharing relatively high overall satisfaction with faculty and staff (most in the 80% range and within 5% difference of each other, see Table 5).

What are some possible explanations for these three trends? In cross reference to the findings for cumulative GPAs, one claim is that a cause of persisters' higher levels of academic achievement is due to frequency of their communications with professors outside of class and their use of skill/tutoring services. The opposite would be that non-persisters received more academic advising/counseling because of issues related to their studies. Then, there is the data feedback that both persisters and non-persisters have high overall satisfaction with faculty and staff, which suggests that these variables do not necessarily have a substantial impact on retention or attrition. Nonetheless, all of these ponderings are speculations that require statistical tests of association and regression before they can be given actual credence.

Formal social system variables. Studies of international student persistence pertaining to this sub dimension (Kwai, 2009; Mamiseishvili, 2012a, 2012b; Smith, 2015) have led to a mixture of results. For extracurricular activities, Mamiseshvili's research found that persisters were less involved than non-persisters while Smith discovered that international student persisters were more social engaged than their counterparts. Meanwhile, Kwai's and Smith's research also did not corroborate for the

relationship between on-campus employment and persistence. Kwai concluded that findings for this variable were inconsistent and Smith's investigation revealed that a larger percentage of international student persisters worked for pay compared to non-persisters.

The results of this study for the connections that international student persistence has with extracurricular activities and on-campus employment were also dubious at best. No statistical significance was found for either variable with differing levels of formal social system engagement exhibited by persisters, non-persisters, and undecideds. Inspection of participation frequencies attest to this through irregular involvement hour patterns for all three international student groups. In separate participation benchmarks for both extracurricular activities and on-campus employment, persisters, non-persisters, and undecideds scored as the high and low percentage points with persisters and undecideds having behaviors that were closer in resemblance (see Table 6).

Therefore, it is still unclear whether or not the formal aspects of a high education institution's social system has an influence on international students' persistence or departure. On the one hand, Mamiseishvili (2012b) and Andrade (2006) mention that international students may prioritize academics over socializing as a strategy for academic success amidst the various difficulties they must overcome in a foreign country. There is also Kwai (2009) again who refers to statements from domestic student persistence researchers saying that having a job while studying is disruptive to academic achievement. On the other hand, promoting active social engagement could have a positive effect on raising international students' English proficiency and building relationship support systems that would in turn lead to higher academic achievement and persistence. Employment also parallels these points in providing a source of income that could reduce any financial concerns brought on by the high cost of American higher education for international students as well as an additional outlet for campus integration and English language development. Once more, it is opposing uncertainties such as these that further justify the need for continued research in respect to formal social system elements.

Informal social system variables. Prior research (Sherry, Thomas, & Chui, 2010; J. Zhang, 2010; J. Zhang & Goodson, 2011) also upholds that constructive social experiences can help international students with their transitional adjustment to living and studying in the United States. There are less studies about the impact that accommodation types have on international students' acclimation to American higher education. However, peer-group interactions are generally viewed as an influential factor. Diverse friendships with others close to one's age can be sources of stability and encouragement that nurture a sense of belonging and well-being. In contrast, feelings of isolation and disconnection from campus or local communities can be detrimental. Akin to this is the assumption that stressors from one's living situation would also be destructive such as nosey environments or other disturbances, difficulties with neighbors, and roommates that act as negative influences.

This study's findings offer some discernments for peer-group interactions and living situation. Despite no statistical difference for these two interpersonal relationship variables, an interesting point is the high rate of overall satisfaction and engagement that ISSE survey respondents reported (see Table 7). Persisters and non-persisters ranked above the 70th percentile range for the impressions of other students and the people they lived with as "sometimes" to "often" friendly, supportive, and a sense of belonging. Undecided student did show some anomalies at 66% and 60.1% for the categories of satisfaction with other international students and their living situation. Additionally, only 55% of undecideds indicated that they frequently had conversations with students from different backgrounds versus persisters at 71.8% and non-persisters at 71.4%. Yet, even these lower scores still express a majority of undecideds having positive experiences.

The standout outcome from within this sub dimension is persuasive findings about living situation engagement. Observing the college managed homestay program compared to other types of accommodation, the purpose was to see if this extra support service offered by the ISSP office has an impact on international student persistence. Responses to the ISSE survey remained questionable with persisters (37.0%) and non-persisters (42.9%) having similar participation rates for living in the college managed homestay, although undecideds (11.1%) were significantly lower. In fact, it was data

from the institutional documents that were far more convincing. Persisters displayed having a stronger connection to the college managed homestay program than non-persisters. This was seen across all three categories of living in homestay for (a) at least one quarter, (b) a year a more, and (c) during the Spring 2016 Quarter (see Table 10).

There are a few possible reasons for why the college managed homestay is likely to have had a profound impact on international student persistence. Firstly, international students live with an American family, which gives them many more opportunities to practice their English and learn about American culture. They also have a furnished private room with the monthly rent being inclusive of all accommodation-related expenses (e.g. utilities, WIFI, cable TV, etc.) and meals are provided. Homestay hosts can give various other kinds of assistance as well, especially for international students that come to the U.S. for the first time who need help with tasks like setting up a cellphone and opening a bank account. For international students that do not have relatives or friends living near the community college research site, the conveniences of homestay programs are immense when considering the time and money spent on finding and furnishing one's own accommodation. Additionally, the extra commitments that come with apartment rentals such as giving a deposit and paying bills. As a consequence, a less cumbersome living situation frees international students' time and energy to potentially focus more on their studies.

Furthermore, because the ISSP office oversees the community college's homestay program, it allows for greater quality control and personalized student care compared to using a private homestay provider. Homestay policies are set by the ISSP office and a dedicated housing manager conducts all the procedures from the initial host interviews, homestay site visits to ensure minimum living standards, matchmaking between the hosts and international students, collection of ongoing feedback, and being available to help resolve any conflicts that may arise. Private homestay providers also handle these processes, but they are typically one step removed. The company may not have an office located near the college or university, which means the international students have to call a customer helpline for assistance. In brief, the amenities that homestays provide and the customize-tailored homestay services that the community college research site delivers could be added support for increasing international

students' academic and social integration. This may explain why more persisters were discovered to have used this accommodation option than non-persisters.

Lastly, the high level of peer-group engagement and satisfaction revealed by ISSE survey responses is worthy of note. It is not easy for international students to make friendships with American students. Language barriers, cultural differences, and the amount of time international students spend adjusting to U.S. higher education settings can be hindrances (Andrade, 2006; Gareis, 2012; Mamiseishvili, 2012b). In particular, Gareis' study highlights that "home and host regions are significant factors influencing the number of American friends international students make as well as their satisfaction with these friendships" (2012, p. 309). To be precise, students from Europe and English-speaking countries were the group that had the most positive experiences with local students whereas students from East Asia had the least positive. Accordingly, ISSE survey data may serve as a potential source of comfort for senior leadership, faculty, and staff at the community college research site because a substantial portion of the international student participants were from Asian countries.

Other Considerations. Data from institutional documents and site visits gave further details about the possible rationales behind some international students' decision to depart from the community college research site. Firstly is the responses that international students gave to the question "4. Why are you transferring?" on the ISSP office's transfer out forms (see Appendix B). Second is feedback that academic advisors received when they inquired with international students that were dropped from class for no attendance.

From these two sources, there are five causes for international student withdrawal from the community college research that fall outside the realm of institutional experience factors. For one, there is always the possibility of unforeseen accidents that lead to international student departure. An example is a student who lost their passport and their Form I-20 document for renewing their F-1 visa while back in their home country after winter quarter so they were dropped from their classes for nonattendance. Health-related concerns are another set of examples. International students are permitted to take a study break if they apply and are approved for an official medical leave of absence. But, one of the 64 non-persisters left due to an illness

and did not notify the ISSP office, which resulted in their enrollment status being terminated. Conversely, there are instances where international students are drawn away by attractive offers from other higher education institutions. This was the incentive for one international student during Spring Quarter 2016 who transferred after receiving a scholarship to play soccer at another college.

However, the two most widely cited reasons for withdrawal are circumstances associated with access to particular academic disciplines and relocation for relatives or friends. In regards to the former, the community college research site offers over 50 areas of study that cover many of the more popular degrees. Yet, there are still niche subjects that a small group of international students left to pursue including automotive mechanics and airplane maintenance. Subsequently, nursing is a competitive degree at the community college research site that has exceptionally limited enrollment, which explains why some international students indicated that they were leaving for a nursing program elsewhere. Then, there were transfer out requests from international student that were moving to live nearby someone they are close to, especially another family member. Of the 11 non-persisters that gave this reason, their destinations were New York, Los Angeles, Dallas, Houston, Los Angeles, London, and Paris with two to other cities in Washington State. All of these locations are known for having larger international communities.

Recommendations for Policy and Practice

Despite the bulk of this study's findings being inconclusive, there are still actions the research site community college can consider towards fostering institutional experience conditions that enhance support for international student persistence. Because of the connection observed between international students' cumulative GPA and their decision to continue with their studies at the higher education institution they are presently enrolled in, policies and procedures should aim to foster greater academic achievement. However, the interrelation between academic integration and social integration should also not be ignored. With these points in mind, the author proposes five recommendations.

Systemizing ISSP institutional research. Zhao, Kuh, and Carini express the importance that "…institutions with large numbers of international students should

systematically assess the experiences of various subgroups…to be sure that they are investing an appropriate amount of time and energy in educationally purposeful activities" (2005, pg. 229). Hence, it is pertinent that the absence of ongoing institutional research for international student services and programs at the community college research site be addressed. Currently, there are only a few mechanisms in place that collect data for the activities that this department administers. The information points consist of a fulltime enrollment headcount each quarter and disconnected surveys conducted by individual ISSP staff members with no centralization of findings. However, these endeavors should be applauded because of the resource constraints that the community college research site is under along with other public higher education institutions in the U.S. due to reductions in government funding over the years.

Because of the limited financial and human capital, it would be unrealistic to ask the community college research site to create a dedicated institutional researcher position for international students and programs at this time. Both the Institutional Research office and ISSP office also have their hands full with other priority tasks for daily operations and ongoing projects. In the meantime, there are a few actions that can be taken to improve institutional research within the present means. Firstly, constructing a centralized database where all data is collected and archived. The information technology infrastructure exists for this with the community college research site having switched over to Microsoft 365 with OneDrive and Forms as well as a Survey Monkey institutional account for all staff. The new ctcLink online enterprise system also offers more opportunities for international student specific queries.

Another task is to standardize the collection of survey forms and procedures. This study's limitations discussed in Chapter III and recommendations for future research in the next section emphasize improvements that need to be made to the ISSE survey. Beyond these, the community college research site has also piloted an exit survey for graduates that should be expanded for transfer out students as well. Surveys for homestay and new student orientation are other feedback collection mechanisms that the ISSP office has launched. In addition, a survey of first-year engagement could be beneficial. Although, senior administrators should be mindful about the possibility of cause survey fatigue by bombarding students with too many surveys.

Digitalizing international student service process. This recommendation is interconnected with the one prior for systemizing ISSP institutional research. As noted in Chapter III limitations, gathering information from institutional documents required the author to manually input data, which increases the risk of error and the amount of effort required to collect and synthesize said data. An example of this is the transfer out form (see Appendix B) that is still paper-based. In addition to illegibility of some international students' handwriting, paper forms also allow for missing information as seen in a significant number of international students not providing an answer to question "4. Why are you transferring?".

That being said, the ISSP office should certainly be commended for the advances it has made thus far. Besides the moving of surveys to online platforms, there already are web-based programs that are being employed including the locally-developed Advisor Dashboard tool and again the progressive switch over to ctcLink and Office 365 systems. The community college research site is also a member of the Canvas Network and uses this management system for various learning mediums. Moreover, the board of trustees for the community college research site has recently approved the adoption of Civitias (illume) with the precise intention of utilizing it for the enhancement of student retention, persistence, and completion. All in all, the community college research site is commendably moving in the right direction forward.

Nonetheless, there is still further room for improvement in the area of digitalizing student services. Other ISSP forms that can be adapted for online submission include requests for high/low credit course loads, travel signatures, and visa renewal letters. While there have been no studies on impacts of digitalized support services and international student satisfaction, one might believe that the time and effort savings for students to complete forms and receive approval decisions online would have a tradeoff. Another benefit would be the perceived long-term reduction in workload for ISSP staff and increased security of international students' personal information. The potential for each of these advantages makes them worth considering.

Formalizing pre-departure/pre-arrival orientation. Orientation sessions have become an indispensable activity for colleges and universities to support incoming students' adjustment to their new education environment. The philosophy behind these

orientation sessions is to introduce students to information and resources that will assist them with their academic success and to begin establishing a sense of community with the campus. Orientation sessions also communicate the higher education institutions norms and policies that students are expected to follow.

The community college research site that is the focus of this study also follows the practice of giving orientation sessions for new students. Incoming freshman receive orientation at the start of each quarter. At these times of year, especially during the first week of fall quarters, the Office of Student Engagement hosts an array of events that aim to get all students more involved on campus. Concurrently, there is a separate three-day orientation session for new international students that caters to their unique circumstances. Like with new American students that are beginning their studies at the community college, international students learn about campus facilities, public safety, important dates for the quarter, and how to register for classes. But, the ISSP office also provides information about study visa requirements, health insurance, homestay, and American cultural aspects with this being the first time that some international students have been to the United States. For those international students that do not come with proof of English proficiency such as an IELTS or TOEFL test score, they take the community college's English placement test to determine which level of English courses they will commence with. Then, on the last day, there is an excursion for sightseeing and socializing with other international students as a fun conclusion to the orientation activities.

Beyond these om-campus sessions, some higher education institutions have launched strategies to help international students start acclimating even before they depart from their home country. Research of pre-arrival orientations (Garza, 2015; Murphy, Hawkes, & Law, 2002) have shown that they have a positive effect for helping students get a head start in preparing for their studies and life in America. One benefit to this approach is that it lessens the burden placed on international students during orientation with many of them being jetlagged from their travels and overwhelmed by the enormous amount of information they are asked to absorb in a short period of time.

The community college research site is exploring a few pre-arrival orientation methods. One is a mobile application that students can download to their smart phone

with steps to complete prior to their arrival on campus. They can also keep the mobile application as a reference throughout their studies. It will be interesting to see how much of an impact that this approach would have if adopted by the community college research site. Foreseeably, the most difficult aspect will be convincing international students to download and use the application. Another approach that the ISSP has conducted on occasion is sending a staff member to visit countries were the largest groups of first-year international students are coming from. They will meet with education partners and give training if needed to ensure that accurate information about the community college is being conveyed and that students' have realistic expectations before they arrive. The ISSP staff will conduct seminars as well for parents and students as a form of pre-departure information sharing and to answer any questions they may have.

Establishing year-round peer mentor programs. Even though the findings in this study for interactions with faculty, staff, and peer-groups were deemed inconclusive, there are some steps in these areas that could lead to lasting changes for international student persistence. In particular, there is the potential for residual effects amidst the between academic integration and social integration. One program structure that the community college research site already has in place for this is peer mentoring opportunities through the ISSP office. The largest call for peer mentor volunteers happens for orientation programs with returning students being great assets in sharing their experiences with incoming students. Orientation peer mentors also assist as translators for new students that have low English proficiency at the time they arrive on campus. Another example of peer mentoring opportunities are for working with the short-term study program cohorts that the community college hosts throughout the year. The peer-mentors roles are to plan customized extracurricular activities, join off-campus excursions, and routinely communicate important information to the students during their stay as well as be an all-around friend that is available to answer any questions.

Research for international students specifically (Abe, Talbot, & Geelhoed, 1998; Udoh, 2000) and community college students in general (McClenney & Waiwaiole, 2005; Miranda, 2011) supports the positive effects of peer mentoring programs. At the very least, they communicate institutional commitment for students' welfare (Braxton et

al., 2014). Additionally, the impact of peer mentoring on international student persistence is bidirectional. The primary goal is to help support incoming students' transition to their higher education studies and life in America, but the peer mentors also get valuable volunteering experience that they can put on their resume and university transfer applications along with some mentorships being paid positions. In both ways, the mentor and mentee become more integrated to the campus community, increase

The difference between the peer mentoring programs that were the subject of previous studies and the ones administered by the community college research site is a matter of operations being ongoing versus seasonal. Peer mentoring through the ISSP office are only for orientation sessions and short-term programs. The ISSP office has instituted steps to reinforce these two avenues with organized training for peer mentors before quarterly orientation sessions and established student-employee positions for short-term program mentors. Yet, what could be of even greater benefit is expanding to have year-round peer mentors with international students gaining from support not only when they arrive, but throughout their studies. These year-round peer mentors can also be assigned as "e-buddies" for prospective students from their home country or region that are seeking information about the community college.

Expanding linked course offerings. Another capacity that the community college research site can build on is the amount of co-registered courses that are available for international students. Tinto (1997, 2003, 2006a, 2006b) uses the term "linked courses" to describe these types of learning environments and is particularly an avid champion of them for community college settings. Linked courses are when two faculty (often from different departments or academic disciplines) join forces to create a curriculum structure that facilitates shared learning experience for students.

At the moment, there is only one linked course offering at the community college research site that is targeted for international students. It is the integration of an English for Academic Purposes (EAP) Level 5 course that is take concurrently with Communication 101. The advantage of this linked class for international students is that it allows them to take a college-level course that meets the degree requirements for a number of two-year program options while they are still working to improve their English proficiency. It is also an opportunity for international students to study in classrooms

with American students, which until that point they have been unable to do because most college-level courses have a prerequisite of at least English 95 (the next course above EAP Level 5) or higher. Encouraging faculty to collaborate for opening additional linked courses could enrich even more international students' experiences. Thus, with the potential to result in more academic integration and social integration that spur increased rates of persistence.

Recommendations for Future Research

In conjunction with the recognized limitations of this study that were listed in Chapter III, there are several recommendations for future research. First of all, International student persistence research as a whole would benefit from further refinement of the conceptual framework for international student persistence. Additional clarifications could be pursued for the sub points under the four dimensions (pre-entry, institutional experience, externalities, and outcomes). For instance, Mamiseishvili (2012a, 2012b) advises that social integration measures needs to be more inclusive of the kinds of extracurricular activities that international students are likely to engage. Beyond clubs, sports, and fine-art events, student government, publications, and concerts were added to this study's conceptual framework for a wider range of choices examples, but one may still wonder if this is comprehensive enough. Additionally, as is the case with domestic student persistence research, these progressive explanations should also be conducted for separate conceptual frameworks based on the institutional type with four-year universities and two-year commuter colleges having unique campus environments and differing student populations. This is why the creation or amendment of any conceptual framework must maintain a level of flexibility that allows for all possible local context distinctions.

Another limitation of this study is its quantitative focus on a single case for the current Spring 2016 Quarter. Much can be discovered in research projects that comparatively investigate international student persistence at more than one community college or a statewide community college system. Analogously, future studies would profit from a mixed methodology that includes qualitative data collection from interviews and focus groups. Furthermore, as Yin states, "…most multiple-case designs are likely to be stronger than single-case designs. Trying to use even a 'two-case' design is

therefore a worthy objective, compared to doing a single-case study" (2009, p. 24). Experts (Andrade, 2006; Mamiseishvili, 2012a) also advise the need for longitudinal studies. Research that follows multiple cohorts across their two years of enrollment at the community college would provide diachronic and micro-level analysis for better differentiating between chance occurrences and real trends. Including association tests and regression tests would also furnish persistence causalities and predictors for more reliable generalizations.

Enhancements can be made to the survey instruments with the aim of improving measures of international student engagement, satisfaction, and persistence. As mentioned in Chapter III, surveys such as the NSSE, CCSSE, and SENSE include residence identifier questions that distinguish international student respondents. However, these surveys are not created with international students in mind. Some of the questions are inapplicable to international students' experiences in US higher education institutions. Reiterating the example used in Chapter III, survey questions about financial aid are often irrelevant for international students because of citizenship requirements for U.S. government-funded financial aid programs with some colleges and universities also not having institutional financial aid for international students.

Surveys must also be sensitive to question wording for comprehension and interpretation by non-native English speakers. To illustrate, during the pilot of the ISSE survey one respondent described confusion that resulted from the question "Had serious conversations with students who differ from you in terms of their religious beliefs, political opinions, or personal values". The student informed that in the phrase "serious conversations", when translated into their native language and in consideration of their traditional customs, could also be interpreted as "fight" or "argument". It is word connotation idiosyncrasies like these that could affect the accuracy of international students' responses. As such, the ISSE survey used in this study would be enhanced by a longer, more comprehensive piolet survey and greater consultation with the English as a Second Language (ESL) departments. The same holds true for any statewide or nationwide surveys that focus on international student satisfaction, engagement, and persistence.

At the same time, it is important to consider the value of maintaining survey participants' anonymity by not requiring personal information such as their names, school ID numbers, or exact date of birth. Ultimately, this privacy decision was an attempt to solicit honest responses with answers not being able to be traced back to the students that gave them. The idea is that if survey takers feel that discretion is preserved, they may be more candid about sharing their experiences. Nonetheless, there are disadvantages to this approach in terms of the extra time students have to input certain information that they would not have to otherwise if they gave their school ID number (e.g. nationality, gender, cumulative GPA, course loads). The possibility of students giving incorrect information for these demographics also increases for each personal characteristic they have to insert manually. Correspondingly, school ID linkages could be used to better identify international students' employment history and hours they worked. Therefore, the prospect of enhancing reliability by requiring students to give their school ID number perhaps outweighs any risks of response inaccuracies.

Last but not least, researchers should take a closer look at honing each of the individual variables that are suspected of having an impact on international student persistence. Aside from those related to institutional experience, the wide range of pre-entry characteristics and external factors are particularly lacking scientific investigation thus far. To illustrate, hypotheses for variables that examine prior schooling, financial sponsorship, family background, and community involvement as well as study motivations and expectations before arrival on campus. Meanwhile, variables within the institutional experience dimension could also be fine-tuned. For example, looking at peer-group interactions with international students from outside one's home country instead of all international students. The objective here is to see more clearly if engagement levels with international students from diverse cultures and languages has an impact on persistence. Additionally, extracurricular activities could be further distinguished to examine the effects of different roles and commitments that international students have on-campus. All in all, deeper inquiry for these dynamics across the three dimensions could lead to greater insights about the various influences on students' decision to persist or depart.

Conclusions

To summarize, this study examined the relationship between institutional experience factors and international student persistence at a community college in Washington State for the Spring 2016 Quarter. Research began with a review of literature on domestic student persistence, international student persistence, and three types of conceptual frameworks that experts used in previous studies. From this knowledgebase, a modified conceptual framework was extended that incorporated essential aspects specific to international students in the context of U.S. community colleges.

Through this single case study design, three quantitative sources were used for collecting date, which included an online survey, institutional documents, and professional experience/site visits. Research focused on four subdimensions: academic performance, interaction with faculty and staff, extracurricular activities, and interpersonal relationships. After efforts to establish validity and reliablity, inferential tests were conducted to answer five research questions and hypotheses based on the these identified four subdimensions.

In the end, findings determined that certain aspects of these institutional experience factor categories had statistically significant differences between three international students classified as persisters, non-persisters, and undecideds. Persisters showed to have higher cumulative GPAs, more frequency of high credit and low credit course loads, and greater participation in the college managed homestay program than the other two demographics. However, there was no clear connection between international student’s decision to persist or depart and the variables of active participation in class, interaction with faculty and staff, extracurricular activities, on-campus employment, interaction with peer-groups, and living situation satisfaction.

Recommendations were proposed for policy actions that the community college could consider to further cultivate international student persistence. These suggestions include systemizing institutional research for the ISSP office, digitalizing international student service processes, supplementing quarterly orientation sessions with pre-arrival/pre-departure orientation channels, enacting a year-round peer mentoring program, and expanding linked course offerings. Ideas for future studies of international

student persistence were also advised such as refinement of the conceptual framework and survey instrument tools along with longitudinal mixed methods approaches that look at multiple community college cases through the lenses of association and regression tests to better determine causes and predictors of persistence. As projected trends allude to continued growth in the number of international enrollments at U.S. higher education institutions, there is certainly a need for more research into the impacts that institutional experience factors have on this important student demographic.

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APPENDICES

Appendix A

Selected Items from the Survey Instrument

International Student Satisfaction & Engagement (ISSE) Survey

* Items are numbered as ordered in the localized Spring Quarter 2016 ISSE survey. The full survey is kept on file at the community college research site.

2. Age
   □ 16 – 17 years old □ 18 – 20 years old □ 26 – 35 years old
   □ 36 – 45 years old □ 55 – 65 years old □ 65 years old or older

3. Gender
   □ Male □ Female □ Choose not to say

4. Nationality
   _____

5. When was your first quarter of study at this college?
   Please write the quarter and year (Example: "Fall 2015)
   _____

6. How many quarters have you studied at this college?
   If you are a current student, please include Spring 2016 Quarter (Example: If you started in Winter 2015, then your answer is "2 quarters").

   □ 1 quarter □ 2 quarters □ 3 quarters □ 4 quarters
   □ 5 quarters □ 6 quarters □ 7 quarters or more

17. Will you finish a two-year/associate degree at this college?
   □ Yes
   □ No
   □ Maybe

21. What is/was your overall GPA at this college?

   □ 0 – 1.9 □ 2.0 – 2.6 □ 2.7 – 3.6 □ 3.7 – 4.0

22. How many quarters have you studied…

11 credits or less?	□ 0 quarters	□ 1 quarter	□ 2 quarters
	□ 3 quarters	□ 4 quarters or more	
16 credits or more?	□ 0 quarters	□ 1 quarter	□ 2 quarters
	□ 3 quarters	□ 4 quarters or more	

23. During your studies at this college, how often have you done each of the following?

	5 Very Often	4 Often	3 Sometimes	2 Not often / Almost never	1 Never
Asked questions in class or contributed to class discussions	□	□	□	□	□
Gave a Speaking presentation in front of the class	□	□	□	□	□
Prepared two or more drafts of a paper or assignment before turning it in	□	□	□	□	□
Not completed homework or assigned readings for a class	□	□	□	□	□
Worked with other students on an assignment or project during class	□	□	□	□	□
Worked with other students on an assignment or project outside of class	□	□	□	□	□
Tutored or taught other students (paid or voluntary	□	□	□	□	□
Used email or an instant messaging program to communicate with an instructor	□	□	□	□	
Discussed grades or assignments with an instructor	□	□	□	□	
Talked with an instructor about your future study or career goals	□	□	□	□	
Had conversations with students of different backgrounds than your own (race, ethnicity, religion, political opinions, etc.	□	□	□	□	
Skipped class	□	□	□	□	

25. Mark the number that best expresses how you feel about your relationships with instructors / professors.

	5 OFTEN Available, caring, supportive	4 SOMETIMES Available, caring, supportive	3 I am neutral / don't have an opinion	2 RARELY Available, caring, supportive	1 NOT Available, caring, supportive
Your instructors / professors during class	□	□	□	□	□
Your instructors / professors outside of class	□	□	□	□	□
Other TCC instructors / professors	□	□	□	□	□

29. Mark the number that best expresses how you feel about your relationships with college staff.

	5 OFTEN Available, caring, supportive	4 SOMETIMES Available, caring, supportive	3 I am neutral / don't have an opinion	2 RARELY Available, caring, supportive	1 NOT Available, caring, supportive
Staff in the International Programs Office	□	□	□	□	□
Staff in other college offices	□	□	□	□	□

30. How many hours do you spend in a typical 7-day week doing each of the following?

	0 hours	1 – 5 hours	6 – 10 hours	11 – 15 hours	16 – 20 hours	21 hours or more
Working for pay	□	□	□	□	□	□
Participating in college activities (clubs, student government, publications, sports, other events, etc.)	□	□	□	□	□	□

31. Mark the number that best expresses how you feel about your relationships with other students

	5 OFTEN friendly, supportive, Sense of belonging	4 SOMETIMES friendly, supportive, Sense of belonging	3 I am neutral / don't have an opinion	2 RARELY friendly, supportive, Sense of belonging	1 NOT friendly, supportive, Sense of belonging
American students	□	□	□	□	□
Other international students	□	□	□	□	□

32. Which of the best describes your current living situation?

□ College homestay □ Homestay thorough an outside company (not managed by the college
□ Living with family □ Renting a room in a house or apartment with a roommate(s)
□ Rent a room in a house or apartment and living alone □ Other

33. Mark the number that best expresses how you feel about your relationships with the people you live with (homestay family, relatives, roommates, etc.)
If you live alone, you can comment about your neighbors or mark "3 - I am neutral / I have no opinion"

5 OFTEN friendly, supportive, Sense of belonging	4 SOMETIMES friendly, supportive, Sense of belonging	3 I am neutral / don't have an opinion	2 RARELY friendly, supportive, Sense of belonging	1 NOT friendly, supportive, Sense of belonging
□	□	□	□	□

Appendix B

ISSP Transfer Out Form

International Student Services & Programs

TRANSFER OUT
Request Form

All fields must be completed in order to process. Processing takes 3 business days.

Student ID #: 201_____ **SEVIS ID #:** N00_____ **Country:** _____

_____

Last (Family) Name **First (Given) Name** **Middle Name(s)**

Date of Birth (mm/dd/yy): _____ **Sex** (circle): **Male** **Female**

TCC E-mail Address: _____ **Phone Number:** _____

1. How many quarters have you attended TCC? _____
2. When are you transferring out of TCC? (Quarter) _____ (Year) _____
3. Which school are you transferring to? _____
4. Why are you transferring? _____
5. What date would you like your I-20 transferred? (mm/dd/yy): _____

In order to process your request, you must:

- ☐ **E-mail an acceptance letter and transfer form from your new school to** [redacted] **OR submit them to the International Office**
- ☐ **Pay all outstanding tuition, fees, and fines to the college**

You will receive an e-mail confirming that your I-20 has been transferred.

Student's Signature: _____ **Date (mm/dd/yy):** _____

Office Use Only

Approved / Denied
Initials/Date:
Notes:

Revised 5/16 AMC

Appendix C

Tests of Validity and Normality for Survey Instrument Data

Descriptives – Persisters

	N	M	Std. Deviation	Skewness		Kurtosis	
				Statistics	Std. Error	Statistics	Std. Error
Cumulative GPA	46	3.15	1.115	-1.621	.350	2.312	.688
Low Credit (11 or less)	46	1.22	1.519	.967	.350	-.589	.688
High Credit (16 or more)	46	2.26	1.497	-.220	.350	-1.393	.688
Active Participation in Class	46	2.9907	.66216	-.178	.350	-.067	.688
Faculty Engagement	46	2.6594	.85053	-.226	.350	-.701	.688
Staff Engagement	46	1.8768	.84139	-.489	.350	-.283	.688
Faculty Satisfaction	46	4.2681	.73575	-1.024	.350	.824	.688
Staff Satisfaction	46	4.2717	.88636	-1.639	.350	3.296	.688
Peer-Group Engagement	46	2.6087	.88695	-.411	.350	.427	.688
Peer-Group Satisfaction	46	4.1957	.79217	-.615	.350	-.357	.688
Living Situation Engagement	46	1.3696	.48802	.559	.350	-1.767	.688
Living Situation Satisfaction	46	4.35	.994	-1.191	.350	-.006	.688

Tests of Normality[a]

	Kolmogorov-Smirnov[b]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Cumulative GPA	.272	46	.000	.730	46	.000
Low Credit (11 or less)	.267	46	.000	.748	46	.000
High Credit (16 or more)	.182	46	.001	.862	46	.000
Active Participation in Class	.093	46	.200*	.982	46	.692
Faculty Engagement	.156	46	.007	.948	46	.038
Staff Engagement	.123	46	.077	.934	46	.011
Faculty Satisfaction	.166	46	.003	.871	46	.000
Staff Satisfaction	.207	46	.000	.793	46	.000
Peer-Group Engagement	.113	46	.178	.956	46	.082
Peer-Group Satisfaction	.236	46	.000	.854	46	.000
Living Situation Engagement	.406	46	.000	.612	46	.000
Living Situation Satisfaction	.396	46	.000	.676	46	.000

*. This is a lower bound of the true significance.

a. Persist or Depart = 2 (Persisters)

b. Lilliefors Significance Correction

Descriptives – Non-Persisters

	N	M	Std. Deviation	Skewness		Kurtosis	
				Statistics	Std. Error	Statistics	Std. Error
Cumulative GPA	7	3.14	1.069	-1.520	.794	2.712	1.587
Low Credit (11 or less)	7	1.00	1.528	1.571	.794	1.971	1.587
High Credit (16 or more)	7	1.57	1.618	.317	.794	-1.501	1.587
Active Participation in Class	7	2.8571	.39555	1.121	.794	-.938	1.587
Faculty Engagement	7	3.0952	.93718	-.722	.794	-1.133	1.587
Staff Engagement	7	2.3333	.69389	-1.242	.794	1.807	1.587
Faculty Satisfaction	7	4.3810	.84828	-1.666	.794	2.806	1.587
Staff Satisfaction	7	4.5000	.76376	-1.571	.794	1.971	1.587
Peer-Group Engagement	7	3.1429	.97861	-.701	.794	-1.291	1.587
Peer-Group Satisfaction	7	4.5714	.53452	-1.520	.794	2.712	1.587
Living Situation Engagement	7	1.4286	.53452	.374	.794	-2.800	1.587
Living Situation Satisfaction	7	4.43	.787	-1.115	.794	.273	1.587

Tests of Normality[a]

	Kolmogorov-Smirnov[b]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Cumulative GPA	.304	7	.050	.781	7	.026
Low Credit (11 or less)	.315	7	.034	.750	7	.013
High Credit (16 or more)	.263	7	.155	.864	7	.163
Active Participation in Class	.355	7	.008	.706	7	.004
Faculty Engagement	.174	7	.200*	.880	7	.229
Staff Engagement	.214	7	.200*	.882	7	.236
Faculty Satisfaction	.233	7	.200*	.794	7	.035
Staff Satisfaction	.315	7	.034	.750	7	.013
Peer-Group Engagement	.238	7	.200*	.843	7	.106
Peer-Group Satisfaction	.304	7	.050	.781	7	.026
Living Situation Engagement	.360	7	.007	.664	7	.001
Living Situation Satisfaction	.338	7	.015	.769	7	.020

*. This is a lower bound of the true significance.

a. Persist or Depart = 1 (Non-Persisters)

b. Lilliefors Significance Correction

Descriptives – Undecideds

	N	M	Std. Deviation	Skewness		Kurtosis	
				Statistics	Std. Error	Statistics	Std. Error
Cumulative GPA	18	2.00	1.715	-.236	.536	-1.849	1.038
Low Credit (11 or less)	18	1.50	1.654	.658	.536	-1.348	1.038
High Credit (16 or more)	18	1.72	1.708	.328	.536	-1.650	1.038
Active Participation in Class	18	3.0000	.57353	-.810	.536	.418	1.038
Faculty Engagement	18	2.6481	.86676	-.045	.536	-.616	1.038
Staff Engagement	18	1.9815	.99326	-.600	.536	-.858	1.038
Faculty Satisfaction	18	4.0741	.83670	-.383	.536	-.746	1.038
Staff Satisfaction	18	4.3889	.65430	-.602	.536	-.777	1.038
Peer-Group Engagement	18	2.5000	.95144	.231	.536	-1.339	1.038
Peer-Group Satisfaction	18	4.0278	.86555	-.402	.536	-.840	1.038
Living Situation Engagement	18	1.1111	.32338	2.706	.536	5.977	1.038
Living Situation Satisfaction	18	4.17	.985	-.784	.536	-.606	1.038

Tests of Normality[a]

	Kolmogorov-Smirnov[b]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Cumulative GPA	.276	18	.001	.775	18	.001
Low Credit (11 or less)	.285	18	.000	.776	18	.001
High Credit (16 or more)	.232	18	.011	.804	18	.002
Active Participation in Class	.217	18	.025	.899	18	.055
Faculty Engagement	.116	18	.200*	.959	18	.590
Staff Engagement	.230	18	.013	.855	18	.010
Faculty Satisfaction	.199	18	.057	.891	18	.040
Staff Satisfaction	.269	18	.001	.833	18	.005
Peer-Group Engagement	.256	18	.003	.909	18	.081
Peer-Group Satisfaction	.209	18	.036	.859	18	.012
Living Situation Engagement	.523	18	.000	.373	18	.000
Living Situation Satisfaction	.301	18	.000	.794	18	.001

*. This is a lower bound of the true significance.

a. Persist or Depart = 0 (Undecideds)

b. Lilliefors Significance Correction

Appendix D

Tests of Validity and Normality for Institutional Document Data

Descriptives – Persisters

	N	M	Std. Deviation	Skewness		Kurtosis	
				Statistics	Std. Error	Statistics	Std. Error
Cumulative GPA	42	3.4481	.06152	-.525	.365	-.760	.717
Low Credit (11 or less)	42	1.76	.220	.706	.365	.364	.717
High Credit (16 or more)	42	2.52	.258	.253	.365	-.560	.717
Living Situation Engagement	42	.2778	.04941	.697	.365	-.821	.717

Tests of Normality[a]

	Kolmogorov-Smirnov[b]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Cumulative GPA	.125	42	.099	.934	42	.018
Low Credit (11 or less)	.179	42	.002	.908	42	.003
High Credit (16 or more)	.147	42	.023	.942	42	.034
Living Situation Engagement	.307	42	.000	.783	42	.000

*. This is a lower bound of the true significance.

a. Persist or Depart = 2 (Persisters)

b. Lilliefors Significance Correction

Descriptives – Non-Persisters

	N	M	Std. Deviation	Skewness		Kurtosis	
				Statistics	Std. Error	Statistics	Std. Error
Cumulative GPA	64	2.1722	.16755	-.357	.299	-1.213	.590
Low Credit (11 or less)	64	.81	.144	1.534	.299	2.146	.590
High Credit (16 or more)	64	.78	.134	1.165	.299	.295	.590
Living Situation Engagement	64	.833	.02100	1.920	.299	3.010	.590

Tests of Normality[a]

	Kolmogorov-Smirnov[b]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Cumulative GPA	.122	64	.020	.909	64	.000
Low Credit (11 or less)	.322	64	.000	.734	64	.000
High Credit (16 or more)	.344	64	.000	.738	64	.000
Living Situation Engagement	.471	64	.000	.537	64	.000

*. This is a lower bound of the true significance.

a. Persist or Depart = 1 (Non-Persisters)

b. Lilliefors Significance Correction